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SCIENCE FICTION

TALES OF WONDER 50¢

THE HELL PLANET

by LESLIE F. STONE

THE INDIVIDUALISTS

by LAURENCE MANNING

THE INVULNERABLE SCOURGE

by JOHN SCOTT CAMPBELL

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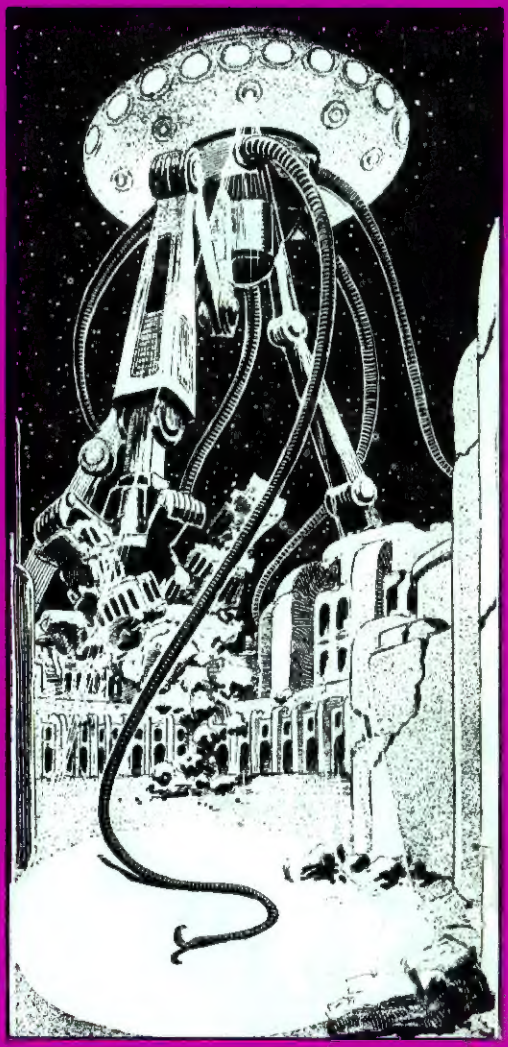

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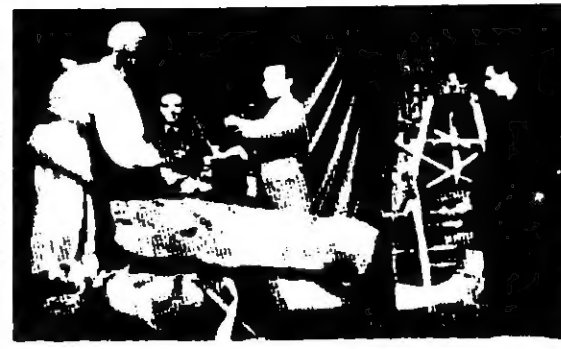

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Editorial

Standards In Science Fiction

by ROBERT A. W. LOWNDES

Science Fiction As Delight

(part three)

THE PURPOSE OF this series is not to persuade you either of the greatness of the authors I'm discussing, or of how perceptive I am, but to share some of the findings of many years' reading, and to offer evaluative tools which may be of some use to you. If you come to some of the same conclusions that I come to here, that is fine—but it really doesn't make much difference to me.

In short, whatever sort of fiction reading you do, it is important to have standards (yardsticks) through which you can measure the value of what you read. And beyond that, since there is more material available than any one person can absorb, it is useful to follow the comments of several critics—*not* just one, however excellent—whose standards and judgments you find persuasive, and who can thus steer you toward works which you might not have hit upon by yourself, but which you will find rewarding; as well as warn you against other works which you might otherwise waste time on.

My own feeling is that it's a good thing to read outstandingly bad fiction now and then; but here again a good critic whom you are more or less in rapport with can be helpful. (Once in a while you can learn more from a real stinker about what goodness is than from a saint.) You might think that, since the bulk of science fiction ranges from bad to the worst (as with every other sort of fiction produced), one hardly needs help in selecting trash; but the fact is that most of the bad material is just middling bad, a sort of bland commonplaceness. You need to read both *The Blind Spot* and *That Hideous Strength* for example, to experience the wide difference between awfulness and excellence; between inept and skillful use of language; between half-baked fantasizing and disciplined imagination, etc.; and thus be able to appreciate why the general run is mediocre.

And you might, as I did, find the Hall work amusing in its own awful way, as well as instructive in a way the author never dreamed of instructing; while the general run of inferior science fiction makes no lasting impression. It's easy to read and that is all. At times it will be just what you want. But without standards you're likely as not to find yourself confined to the mediocre and becoming less and less inclined to tackle works which build aesthetic muscle. The good author makes demands upon you and his works are not always easy to read; they demand close attention. But I am only suggesting ways of increasing pleasure, not outlining duties.

My contention, then, is that while I have found and still find, an Edgar Rice Burroughs or a Robert E. Howard delightful, an Isaac Asimov, an Arthur C. Clarke, a Lester del Rey, a C. S. Lewis, a Fredrik Pohl, a Clifford D. Simak, a Theodore Sturgeon, J. R. R. Tolkien, etc., are more rewarding to me. I mention these latter here mainly because they are not the contemporary authors I am about to discuss.

To recapitulate: The three authors I did choose were chosen because they were the three whose stories I have found myself either reading for

the first time, or being drawn to re-read most frequently in the past five years. There was no need to read them at all, outside the fact that they delighted me enough to want to do so; and thus they were the ones I *did* read when I read science fiction outside the requirements of a science fiction editor on the job.

There were three oldtime science fiction authors I also read a good deal of, for the same reasons, during this period of roughly five years, and I discussed them in part two of this essay. The odds are that all six (Jules Verne, H. G. Wells, Edgar Rice Burroughs, E. E. Smith, Ph.D., Robert A. Heinlein, and James Blish) will not have been your favorites during this period, but there are reasonable odds that you will be familiar with them, and may have one or more on your own "tops" list.

WHAT QUALITIES are common to a greater or lesser degree to all six? What elements might be considered as necessary ingredients in any science fiction that I find (and you might find) delightful? I arrived at six categories: Invention, Suspense, Characterization, Surprise, Richness, and Reward.

Suspense is something that proves itself for me, as it will for you; but neither you nor I can prove it to anyone else. We can only say we found it there, and perhaps a third party will and perhaps he won't. But if he does, all three of us cannot then prove it to anyone else, etc.

Surprise is also highly subjective. It has a great deal in common with suspense, but is not exactly the same thing, since it has to do (as I am using the term) with re-reading, not first reading. I think I can illustrate it best by going to another field.

Once upon a time I did not know how the Civil War in America came out, who won, where and how. Now that I have a fair idea of the main events, a book or article on the subject can be quite dull. But reading the old familiar story at the hands of a Fletcher Pratt or a Bruce Catton can re-invest the story with freshness, so that I almost forget that I know. It's as fascinating as if I had no idea as to how it would come out. And re-reading Pratt, as I did a couple of years back, I find that there are some things which I had either forgotten or which I did not catch the first time, much as I enjoyed *Ordeal By Fire.*

All of my six authors have shown this quality of freshness to me. Some things I know are coming; I anticipate them and greet them as old friends, and it is not a let-down when I come to them; other details I have

(Turn to page 110)

THE HELL PLANET

by LESLIE F. STONE

It was a world of fantastic wealth, for the picking, if a man could stay alive on its poisonous surface . . .

THERE HE IS. Lord! what a hot little place. Can't say I look forward to landing there particularly. Rather well named, what? Vulcan, master of the forge, maker of the armor of the mighty gods from the white heat of the flame!

"It's the find of the century, Gorely, no question of that, if only it yields a third the amount of *cosmicite** Wendell says it will. If so we'll be multi-millionaires after this trip."

"Well, at least, we won't be in the same straits that the Sellers crowd were. We know what we're up against with Wendell on hand. What a fight he must have put up to come through alone."

"Ssh . . . here he comes."

The pair, Tom Gorley and Jack Morgan, were standing in the forward turret of the spaceship *Adventure*. Both were seasoned explorers as were all Captain Timothy Beale's crew. They had been in many odd places together — such as Diane, on the very edge of the solar system — but this was their first time so close to Sol, beyond Mercury. They wore the dark glasses and insulated refrigerated suits necessary scarcely more than twenty-five millions of miles from the sun.

****Cosmicite* seems to have been that rare metal possessing the ability to absorb and reflect practically all rays, no matter what their wavelength. Its use on Earth as a heat-insulator would be revolutionary if sufficient quantities were to be had.**

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With her very first story, published when she was in her teens, in the August and September 1929 issues of *AMAZING STORIES*, Leslie F. Stone had an important "first", for this was the first tale in the science fiction magazines to have a female space pilot. *Out Of The Void* was well received, and a revised and enlarged edition was published by Avalon Books last year. The same year (1929) saw her novelet, *Men With Wings* in the initial issue of *AIR WONDER STORIES*, and while it actually appeared a month earlier than the two-part serial listed above, my impression is that it was written later. This sort of thing often happened in the old days. *The Conquest of Gola (WONDER STORIES*, April 1931) represented another "first" in the science fiction magazines, dealing with an alien matriarchy which overcomes Earth; and the same month saw the beginning of her three-part sequel to *Out of the Void (Across the Void)* in *AMAZING STORIES*—April, May, and June. The originality continued with the present story, which had "realistic" touches that I had not seen in science fiction magazines before—quite different from the customary tale of romantic adventures on other worlds. Nor was this the last, by any means; at least one new and different story by this author would appear annually for some years to follow.

The refrigerant units of the *Adventure,* despite the heat insulating coating of *cosmicite,* were hard taxed to keep a liveable temperature within the shell of the space flyer, but the men were not heeding the heat. They were looking forward to their descent upon the orphan of the solar system, Vulcan, innermost planet, discovered by the crew of the *Corsair* four months before.

Astronomically speaking, Vulcan had for many years in the past been conceded as a possibility by scientists. The perihelion of the orbit of Mercury moves somewhat faster than it should if the planet were acted upon only by known forces, and this fact had led astronomers to believe in an intra-Mercurian planet. The peculiarity of Mercury's motion pointed toward an attraction of a planet whose orbit lay between that world and the sun. A planet in this position could be observed only with difficulty, for its elongation from the sun would always be small. Several times in the past it was supposed to have been observed, yet others disputed the truth of such a discovery. Naturally, it would seem next to impossible to see this tiny planet against the glare of the sun's disc.

It had taken Captain Boris Sellers to find it; but he had not survived his discovery. Every man of his crew had died a horrible death, except Bill Wendell, who managed to pilot the *Corsair*

alone back to Earth. That journey had left its mark upon him, as one could see at a glance, as he came into the *Adventure's* turret.

Although only thirty-four he looked a man of sixty. His hair had turned snowy white, his eyes were dimmed, still filled with some horror which lurked in their depths. Heavy lines creased the flesh about his mouth; and his walk was that of a man whose body is tortured by the pains of senility.

Only the lure of the vast deposits of *cosmicite,* that priceless metal without which no ship could dare travel the void, had brought him back to Vulcan. He had the guarantee that half the wealth the *Adventure* would unearth would go to him and to the families of those men who had lost their lives on the ill-fated journey of discovery.

The men of the *Adventure* were diffident about addressing. Wendell. He seemed to move in a world of his own, annoyed if others sought intrusion there. But today was different—he had come seeking the company of those in the turret.

He stood gazing out the thick port giving view to the world they were approaching. The window, like all the shell, was daubed with a covering of *cosmicite* put on with a spray so that it was so thin as to be transparent. But for that coating, the crew of the *Adventure* could not have withstood the terrible emanations of the radiations that pervaded space.

The discovery of *cosmicite* is a story in itself. One remembers the first intrepid space explorers who lost their lives in attempting to conquer space with no knowledge of the danger they faced when they plunged out of Earth's atmospheric blanket. Oddly enough, the man who discovered the only material impervious to the dangerous rays was one by the name of John Cosmo.

"But you found the mines, didn't you?" Gorely asked timidly, suddenly realizing how little they knew of what lay before them. Wendell had, of course, explained everything to Captain Beale; but for the most part the men were ignorant of what they were to face. Men of space never asked questions; their trust lay in their leaders.

Wendell looked up in surprise at the other's voice. He studied the man before him as if seeing him for the first time in his life, though purposely he had come here seeking companionship.

"The mines . . . the . . . oh, you mean the *cosmicite* mines. No! We did not find the mines. The natives had it. Ingots of it, statues,

shields, arrows and spears tipped with—they worship it like a god! *Cosmicite. Dasie* they called it. Believe it protects them from their enemies. A backward people, but they mine the metal.

"And they thought we were gods. A kindly people. They wined and dines us . . . only not me, I had a bad stomach, a recurrence of sickness of years back. I was confined to the *Corsair,* on a soft diet, too sick to eat or walk. I was put out by it, I imagined my companions receiving gifts I could not share. I was jealous! I avoided them.

"The fourth day I felt better. I went out to meet them as they came into the ship laden with gifts—strange fruits, meats, wines and *cosmicite.* I picked up a bunch of fruit that resembled grapes. I ate one. Then . . . then Berber, my buddy . . . he pitched to the floor screaming and retching. He was sick, something was tearing at his vitals; he said he was burning up . . . then Lassier was taken sick. We put him to bed, but he wasn't the last. Another and another were taken ill; then the captain.

"There were only Chin and I left to treat our fellows. We went from one to another giving medicine that seemed to do no good. Berber could not raise his chest to breathe now. It . . . it was as if his bones could no longer support the flesh; they were rotting away! The others were the same. Now Chin could no longer walk. Oh it was . . . damnable. My friends dying . . . I unable to ease them. Berber died, then Lassier . . . they all died before my eyes. Captain Sellers alone knew what it was; he told me. The fruit, the water . . . all poison. It was radium . . . the soil, the water, the growing things . . . even the natives were impregnated with it . . . and it was too rich in solution for men of Earth. It was killing them.

"I remembered the single grape I had eaten. I thought I felt stomach pangs already, but I had to stand by and listen to Captain Sellers telling me what to do. 'They think us gods,' he said speaking of the natives. 'They must not know of this: that we die. You, Wendell, take the *Corsair* back home with all of us in it! You must not bury us here. There is a fortune on Vulcan; it is stupendous. *Cosmicite* is scarce throughout the solar worlds, but this planet is filthy with it . . . and radium. You must get home, tell others what we have seen, bring an expedition to mine it. Treat the natives well; they may be induced to tell where their mines lie, then all the solar system will be ours . . . thousands of space flyers can be built in place of the paltry fifty or sixty now in existence. But let no man *eat or drink of this world!*'

"He said more, then began to babble, and like the others it grew difficult for him to breathe. I turned away, forced my stomach to give up that bit of fruit I had eaten. I was frantic with the moans of my fellow men in my ears. Men dying like flies . . . " He lapsed into silence while he remembered.

After a pause the young-old man began to speak again. "I tried my best to ease their pain; some died more quickly than others, according to the proportion in which they had eaten the food of the natives. But they had had four days of it. Sellers was last to go, though quite out of his head by then. It was not easy to drive the *Corsair* without help, to plot my course and watch out for meteorites. It meant days of continual vigilance at the controls. And there were the bodies of my fellows below.

"I could not move them. They were already rotting . . . putrefaction had set in almost immediately with their passing. I could only cover them with sheets; soon the ship smelled like a charnel house.

And I began to feel real pains in my stomach. The single grape had poured poison into my system before I got rid of it. Lucky that I had eaten no more, else I would not be here to tell the tale. I suffered . . . my stomach was a fiery pit; my head spun like a top; my knees were weak, and with it all I had to stay at my controls. I fought it off somehow . . . as a result I am a sick man for the rest of my days. I . . . well here I am back for more. And if you value your lives, men, if you do not want to die an evil death, do not be tempted by the sweet luscious fruit and sparkling waters of Vulcan . . . it's . . . "

He would have said more but Jimson, Beale's lieutenant, had appeared in the doorway. "Mr. Wendell," he called, "the captain wants to see you in the control room."

Wendell went with him. Beale was studying the world that rapidly edged closer. They had come halfway around the sun to meet it, and now Vulcan lay in quadrature to them, its first quarter, showing them half its illuminated side. At most it was but 1200 miles in diameter, a small world whose mass was surprisingly great in proportion to its size. Wendell had already explained to Beale that Vulcan's surface gravity was in excess of that felt by men of Earth when upon the moon. That was because it was made up of the heaviest of metals. Now the captain wanted to know if Wendell knew where they were to land.

In half an hour the little world looked like a bowl with upturned edges. They were circling it, passing from the light into the darkness twice. They saw it had no really large areas of water. There were innumerable lakes

and rivers, but nothing that could be rightfully called a sea. There were mountains in one hemisphere, but for the most it was flat or slightly rolling country. One thing was particularly noticeable about the night side, the fact that the vegetation gave off a ghostly light, glowed of itself like phosphorus. The lakes were molten silver, the jungles a riot of wild color.

As they dropped closer, Beale saw that landing was to be a problem. Never had he seen a more fecund world. Nowhere could they see the ground, so heavily was it grown with tall spiky trees, fleshy vines and spreading shrubs. Even the banks of the waterways were overgrown, heavy with life. At Beale's query, Wendell shook his head. Just so had the *Corsair* found Vulcan. They could blast an opening in the trees for themselves, but if they wished to find natives it would be best to cruise about until they sighted a clearing, a man-made clearing.

By laboriously pulling out the trees, the men of Vulcan made a council-hall for themselves. In one of these clearings the *Corsair* had found a ready berth, nor had the natives appeared to resent their using it. The *Corsair* had found the village near the north pole. Wendell had left too hurriedly to be sure of finding it again, but he imagined they could find another like it.

Every man able to get near a porthole was made a lookout. Twice they circled Vulcan again and were rewarded. A circular opening in the jungle lay below, just large enough for the *Adventure* to fit with little room to spare. Wendell did not believe it the same clearing in which the *Corsair* had landed, but it was likely enough with a promise of a village nearby.

With wondering eyes the men stared at the queer life about them, for it was even stranger than it had appeared from above. The trees were for the most part a hundred feet high, straight, slender with trunks that resembled those of a palm tree: smooth, glistening, barkless; but the branches that jutted from their crown were unlike anything they had ever seen. They were long, stiff, needle-pointed spikes with a feathery lacy froth of needles. The branches were no more than three to four feet in length, solitary and uncrowded. The only shade cast by the whole tree was the straight unvarying image of its polelike length.

Vines clung somehow to the unyielding trees, vines that dropped festoons of needles from their length linking the jungle trees together. Around the trees was growing a veritable mat of stiff-stalked young trees; bushes, stocky plants, all with underdeveloped spiky leaves and branches. Only on the ground was there a growth with a fleshier leaf—broad and flat,

prone to the soil. The bushes mostly resembled palmettos and cacti.

Nature, at first lavish, had turned about-face and with niggardly hand finished her work, stinting the land of her natural abundance. Then she remembered and was more prolific, for on each tree, weighing down the vines, bending the backs of the shrubs, palmettos and cacti were the fruit clusters. Red, yellow, blue, orange, green they were; long banana-shaped fruit, globulars of all sizes, berries, melons—round, oval, cylindrical, every shape and form; luscious peaches, over-sized pears, mouth-watering berries, scarlet cherries, purple grapes, juicy plums, golden oranges . . .

"It's the sun," explained Wendell. "Were the leaves of the trees broad they would absorb too much vitality beside that already partaken of from the radioactive soil, hence they would shrivel and die under the glare of the white-hot sun. Nature can be more prodigal with the fruit because there are enough to make use of it . . . See . . . " He pointed out flocks of tiny birds, no larger than humming birds darting among the fruit, the swarms of insects feeding in armies, the dainty head of some animal feeding on fruit fallen to the ground.

Another creature that looked like a cross between a bear and a monkey was climbing a tall tree toward an especially appetizing cluster of fruit hanging by a slender cord from a vine. The fruit proved just out of reach of the animal, but with infinite patience the bear angled for the prize with long forelegs. At last, unable to gain the fruit by that means, it let go its hold upon the tree-trunk to make a lunge for the fruit cluster, and landed upon it with all four feet. The vine held and the animal went about the prosaic business of harvesting its dinner without a care as to what would happen when it ate away its support.

A shadow fell against the trees and ground. Glancing up the men saw an unusually large, brightly-plumaged bird plunging downward. Through the thick walls of the ship they could not hear its cry, but they could see its paralyzing effect upon the flock of humming birds which for the nonce seemed suspended on quivering wings unable to move forward or backward. The killer had time to swoop down, gobble a third of their number before their brains began to function properly again, and they could escape. The big fellow made no attempt to follow. He simply turned to the fruit nearest at hand and commenced to gorge himself.

Beale and Jimson, standing with Wendell, grew aware of even more life in the jungle. Birds of every size and description flew through the trees; creatures lurked among the vines; snakes and tiny furred things raced up and down tree trunks and vines, flinging themselves through the air.

There was life on the ground, peering from between the heavy, thick leaves of the vines that crawled upon it. Suddenly Wendell was pointing out a strange apparition to his companions.

It stood staring back at them from between two tree trunks, a creature five feet tall, upright on two legs. It had a small pointed face that was fox-like, yet faintly resembled a human face! The head was round, bulging upward from beetling brows. The ears that came to a point at the top were set on the side of the head slightly below the level of the large black eyes. The nose was long, pointed—the cheeks and jowls sloped forward adding to its animal-like appearance. The mouth was wide, the chin rather heavy set, incongruous looking to the rest of the face, giving it its humanness that was otherwise lacking except in the rather intelligent set of the large beady black eyes.

The face and body were bare of hair, the skin a slate brown. The body was proportionately slender to its height; in repose it leaned forward so that the thin arms dangled below the knee. Hands like the face were free of fur, delicately-boned, almost claws.

"It's the man of Vulcan," averred Wendell. "Or at least we called it a man, for such were the creatures we encountered before. This clearing is their meeting hall. They live back among the trees. If these little fellows are like the others they will have *cosmicite* in plenty!"

"What shall we do?" queried Beale.

"Nothing. Wait. More will come. They are peaceable, or so the others were. Let them see we mean no harm. Let the men stay at the windows—come and go—act natural."

2

FOR TWO DAYS no attempts was made to communicate with the strange little "men" of Vulcan. All the crew were now familiar with their bizarre appearance, their fox-like faces, their twitching ears that always seemed in movement, their stiff gawky walk, their strangely shiny bodies. For the most part they seemed unarmed; only a few carried a strange type of ridiculously small bows and arrows. What interested the Tellurians the most was the fact that the arrows and a few spears that appeared now and then were tipped with white metal *cosmicite!* The metal seemed in common use among the Vulcanites, yet at the same time was held in veneration. They wore strings of it about their necks from which dangled either round nuggets of the same material, or tiny, crudely-carved figurines, amulets. They wore queer elbow and knee-shields

of *cosmicite,* curved plates that fitted over the joints and were held in place with thongs. Some had bits of *cosmicite* wire twisted about both head and body, and a few carried broad round shields of it on the left arm.

The very inactivity of the *Adventure's* crew seemed to have gained the confidence of the natives. They had drawn nearer and nearer to the spaceship, studying its exterior first from afar, then dared to lay reverent hands upon its shell. They appeared to have discovered that it was coated with *cosmicite,* and this homely truth had wiped away the last vestige of their fear. They could understand that!

One little fellow, more daring than the rest, enticed two of his fellows to form a living ladder for him to climb upon their shoulders. That brought him up to the level of one porthole in the ship's side. There were two of the men within, and for several moments the three stared at each other—the two curious, the fox-man awed by his own daring. From them his eyes flitted to the room beyond. For the moment the savage forgot everything else as he stared at the strange furnishings. Then suddenly he swayed and toppled from their sight; his ladder had given way.

He picked himself up, and they saw him racing across the clearing and into the jungle, to tell his friends what wonders he had seen.

On the third day Wendell, Beale and Jimson sallied forth from the flyer. They wore the lead-mesh undersuits Wendell had insisted be brought along, shoes with thin lead soles, helmets of lead-mesh that had visors over the face that could be raised at will. Their gloves were heavy with lead. Lead alone would protect them from the radium emanations that had killed the men of the *Corsair.* Besides this they wore dark glasses to protect the eyes against the excessive sunlight of Vulcan. Only the small gravitation on Vulcan's surface, but one-sixth that on Earth, permitted the men of Earth to burden themselves with hundreds of pounds of lead. The men knew, were they to obtain sufficient *cosmicite,* that a thin covering of it would protect them from all dangerous rays, and these ungainly spacesuits would no longer be necessary.

Through the trees they could see fox-men scurrying away in sudden fright. Wendell led his party to the edge of the clearing, then deliberately stood there gesturing broadly to his companions as if explaining things to them. The natives did not run far; soon the three were aware of many eyes upon them. A half hour passed while the Tellurians permitted the Vulcanites to grow accustomed to their strange appearance. Now Wendell drew forth his light service air-pressure gun and with a great show of

pantomime pointed out to his companions a giant bird that hovered over the clearing. He aimed his gun. There was no explosion, but the bird fell almost at the men's feet.

It was Jimson's cue. He acted as if Wendell's feat were too simple for words, and pointing out a cluster of high-hanging fruit he drew his needle-beam pistol. Scathing fire leaped from the gun, played on the fruit and charred it so that it hung there a mass of cinders. Whereupon Beale drew his cathode atom-destroyer. A thousand feet away stood an unusually tall tree, rising almost two hundred feet into the air. Upon it Beale turned his ray. The white light was blinding and the tree was no more!

Without a word the three turned and hurried back to the flyer. A great burst of sound rose from the jungle, the awed voices of the fox-men. Surely, come what may, they would carry in their hearts a deep reverence for the men of the *Adventure.*

The following day the three again went into the clearing. The men crowded about every window port to watch their reception by the natives. They could see a number of the little fellows lurking among the trees. The appearance of the three in the open seemed to be a signal long awaited; the undergrowth was suddenly thick with the shiny-skinned men. There was some hesitation among these, but after a few minutes of this indecision the three realized they were merely awaiting the arrival of several personages who could be seen hurrying down the path that led from their village.

These were seven creatures from whose path the others drew away. They were taller than the average fox-man, broader of shoulder, heavier of limb, with faces that were shrewd, intelligent. Like their fellows they were unclothed and they, too, were ornamented with bits of *cosmicite*—but their shields were larger and heavier.

What made them stand out from the others was the color of their skin. It has been noted that the natural color of the Vulcanites was a brownish-gray, whereas in the case of the seven chiefs (for such they proved to be) no two were alike. The foremost was white, a pure virgin white made possibly by some bleaching agent. The second was red, a bright naked red. He was followed by a third whose skin was green, a fourth blue, and so on through the colors of the spectrum, bright garish colors like those that filled the jungle.

The white-coated native was evidently the leader. He came striding forward filled with the importance of this occasion, cynosure of all eyes. As he drew near the Tellurians saw that in addition to his *cosmicite*

trinkets he wore a head-dress of feathers that stuck up from his pate several feet, permanent fixtures glued tightly in place. Also he wore wristlets of the precious white metal besides his knee and elbow shields, and when he turned about they saw a long hairless tail of some animal securely fastened to his person.

Later when the Tellurians learned enough of the rudimentary language of Vulcan, a common tongue used by all tribes, they discovered this imposing creature was Rafel, elected chieftain of his tribe that numbered no less than three thousand males. (Females and young were not counted in the census.) There were six hereditary chiefs (*tuco**) who once every six years** were selected from among their families, one chosen to be their official representative. Once elected he could not be deposed during his reign; the very chiefs who put him at their head were as much his subjects as the lowliest *muli.*** His power was of life and death.

Rafel not only directed the civil welfare of his people, but was also their spiritual leader. And since there were no less than a thousand gods and devils in their Pantheon, his job was not one to be sneered at. Yet, with it all, he turned out to be a kindly if not kingly fellow. His dignity sat not too heavily upon his shoulders and he proved open to reason. Like all savages he feared most to lose face, to be made a fool of! He believed without question that the *Adventure* had come from the sun. Had he not seen the "sky-boat" come out of the sun itself? He considered his tribe unduly honored by the visit.

He came leading the procession of emblazoned *tucos* forward, halting at the edge of the clearing. Wendell, Beale and Jimson had taken but a half dozen steps from the airlock, permitting the first move to their "hosts". And for all his apparent efficiency, Rafel was for the moment

*It is difficult to give Earthly equivalent to Vulcanite terms. There were scarcely more than a hundred words in the vocabulary, and many proved obscure to the Tellurians. The term *tuco* was applied by the fox-men to anyone or any thing of high rank. Gods, men, and devils were all *tuco!*

**The year of Vulcan is only fifty-four Earth days long, but since Vulcan rotates on its axis once every 19 hours, its sidereal year is sixty-eight and a fraction Vulcan days long.

***_muli_ . . . captive, applies to both man and animal. The main motive of war between tribes is for the securing of slaves. Rafel's tribe numbered more than four thousand *muli,* male and female.

at a loss as to what he should do on this unprecedented occasion. A chieftain of three thousand adult males, however, must have recourse to doing the right thing at the right moment. After his single minute of indecision he was suddenly a typical "greeter"

Standing just within the clearing with circlet of trees at his back, the chieftain threw wide his arms as if to embrace the universe, and began to recite what was undoubtedly a prepared welcome speech. It was long, twenty minutes of it. Jimson nudged his chief. "The chairman of the Rotary Club back home ought to be in on this. All that's missing is the key to the city."

"Hush, I think it's coming now," whispered Beale.

For Rafel had raised one arm high above his head in signal to those behind him. Now the six elaborately-colored *tucos* came forward bearing a burden between them. It lay suspended upon a square of woven grasses, a tiny statuette. No more than six inches tall it was of exceedingly crude workmanship, a figure of *cosmicite*. It took Beale and Jimson several moments to discover that it depicted a rather ugly little fox-man, shiny-skin, squatting on his heels and holding a round globe (also of *cosmicite*) between its knees which it contemplated.

"It's a god, possibly the god of the sun," explained Wendell, who had seen a like figurine on his first landing upon Vulvan. They could see that the six carriers held the figure in deep veneration. They halted before Wendell, waiting for him to do something about it. Jimson nudged him. "Take it! "

Wendell did not listen to him, but merely raised a hand as if in blessing, and by the expression on Rafel's face they saw he had done the right thing. The seven were grinning broadly. Then, at Rafel's signal, the six *tucos* retreated back into the trees carrying their god with them.

"That's one up for our side," grinned Jimson.

Rafel waited until his companions were out of sight, then gave a second signal to his people. This time it was not the gaily-colored chiefs who answered his summons, but a dozen slate-brown *mulis*, each carrying a grass-matting basket on his head. At Rafel's signal they lowered them to the ground. They contained a variety of fruit, a sort of meal-cake, the raw flesh of strange animals, water and nuggets of *cosmicite*.

Wendell made no motion to accept the fruit, but he did stride over to the single basket of *cosmicite* and select from the top a single nugget. He motioned for the captain and Jimson to do likewise. When that was done he waved an arm over the baskets. But this time Rafel did not understand; a frown appeared between his beady eyes.

In a rasping voice he called out three words. There seemed to be some delay, but after five minutes or so a dozen more slaves came running forward with twelve more baskets on their heads. These contained the same variety of food, the twelfth, *cosmicite*. Rafel watched Wendell anxiously, but he only shook his head, and sought again to wave the baskets away. Again Rafel called out three words, and though the delay was longer than before, twelve more baskets appeared!

Wendell realized if something was not done to half the procession the *Adventure* would be surrounded by baskets. It took him ten full minutes to make Rafel understand that his men and he had no use for the food and water, but that the *cosmicite* was acceptable.

The chieftain understood at last. He called a word to his bearers to carry off their burdens again, leaving the three baskets of metal. Jimson turned to the ship, motioned for men to come through the lock and carry away the baskets. Rafel waited quietly with arms crossed while this was done. With signs he made the men understand they were now to follow him.

He led the way down a well-worn path through the trees. The natives stood back from the path watching them pass. They had glimpses of both women and children with dumb animal faces and round pot-bellied figures.

A hundred yards from the clearing the village began, if such could be termed a village. There were no houses, just burrows in the ground entered by round holes covered by a trapdoor of matted grass, vines and jungle debris. When dropped in place no one could guess at the teeming life that dwelt below. The jungle life went on above ground undisturbed, food ready for the hand of man.

After passing a dozen openings Rafel led his guests through a trap only more imposing than its fellows because of its larger size. There was a crude ladder of pegs set in the straight wall ten feet down. Down the ladder they found a large room roughly fifteen feet square. It was not dark, for the walls sparkled with bits of shining pebbles that gave off a dim eerie light; while in the center of the chamber was a large piece of jagged ore, the size of a man's head, emitting light.

Jimson pointed out that this light-bearing ore was one of the several radioactive salts. He had been to the radium mines of Luna and had seen like ores. With that inexhaustible supply of the precious element so close to home it would be centuries before men of Tellus would turn to Vulcan for their needs. Beale was glad they were wearing their leaden

suits. No wonder Sellers and his crew had died so horribly; a few hours' exposure to those rays and death was inevitable!

Evidently the bombardment of the radioactive rays did not affect the fox-men. Instead, were they taken from their natural environment they would most likely perish for the lack of the emanations that were part of their beings. Poison to one, life to another! Possibly, too, the food of the Tellurians would be as poison to them as the fruits of Vulcan were to the Tellurians.

Glancing about the room the three wondered about furniture, but for some mats of moss in one cormer the chamber was quite bare. Rafel solved the problem by pointing to the floor. The six *tucos* who had followed them into the chamber squatted behind Rafel who took his place facing the white men. The chieftain made several queer cabalistic passes through the air and a number of women came down the passage with metal bowls of food which was placed before the men. There was some half-cooked meat, fruits and a thick gruel. Wendell motioned to show that neither he nor his companions would partake, but that did not deter Rafel and his fellows. They nodded their understanding and "fell to" noisily.

After the first few minutes of watching the fox-men enjoy their fare, Beale decided it not amiss to discuss their situation. As the three talked Rafel eyed them covertly, but his glance was only friendly interest.

Judging by the three half-filled baskets of *cosmicite* presented to them, Wendell conjectured that the metal was not too plentiful in the village. There was no sign of any in the room in which they sat, except upon the persons of the chiefs. Possibly the three baskets were all the superfluous metal in the village. By force of arms they might denude their hosts of what remained on their persons, but that was not what they wanted. They must know the source, the location of the mines themselves. There was but one way to find out. They must learn the language of the fox-men. Beale decided upon taking the easiest and quickest course.

3

ATTRACTING RAFEL'S ATTENTION, he pointed to himself and said "Beale." After a moment's hesitation Rafel pointed one thin finger at himself saying "Beel." The captain shook his head, and it took him a number of minutes to make the chieftain grasp the fact there was only one Beale. After Rafel got that into his head it was easier, and with some coaching they learned his name. It was slow progress, but Rafel

at last learned that Jimson was "Jimso" as he called him and Wendell was "Wemdal." Then elaborately he named all his six fellows.

With that lesson fairly well learned, Beale pointed to Wendell, Jimson and himself collectively, and again after a great deal of waving of arms and patience he learned that the fox-men were called "Tolis."

Henceforth it was simpler. Beale had but to point to an object to obtain its name. Jimson had found a pencil and pad and jotted down each new word with its equivalent much to the fox-men's wonder. The room in which they sat was a "kel;" the floor, and this included the ground as well, was "get"; good "gimgim;" *cosmicite, "dasie"* and so on.

When his teachers began to yawn unselfconsciously, Beale realized how late it must be. Rafel appeared disappointed they would not stay the night. Wendell, Jimson and he were feeling their own hunger now and were anxious to get out of their heavy suits. Rafel ushered them forth into the growing dusk with great aplomb.

Even before all the light of the sun was gone, the jungle was changing in aspect—the ground, the trees, the very fruit and even the bodies of the men of Vulcan were beginning to glow of their own light. It was as weirdly beautiful as it was strange. Beale and Jimson recalled they had seen the same thing on the night-side of the planet with their arrival. Wendell pointed out that everything here was luminous because of the high percentage of radium that was absorbed by every organic thing.

By the time they reached the *Adventure,* the full wonder of the eerie night was upon them. Every tree trunk, every tendril of the vines, every separate spiney leaf, every berry was plainly outlined as though in silver. Night insects just beginning to stir, carried their own lanterns; the birds were streaks of brilliance against the black moonless sky. Altogether Vulcan was an unusual world.

It was more than a week before their real mission could be spoken of to Rafel. During that time Wendell, Beale and Jimson spent most of their time in the company of the chieftain, learning his tongue and the customs of these savage little people. Twice Rafel had been taken into the *Adventure.* He seemed quite willing to devote all his time to the strangers; awed by their presence, he took childish delight in their company. He did not question. If they wished to enlighten him about themselves of their own will that was sufficient. The *Adventure* was something outside his realm, incogitable.

The men of the crew were not so patient. They could see no good reason for this dalliance. They recommended stripping the natives of their ornaments and forcing them under pain of death to tell where more was

to be had. They were free to wander about the "settlement" as they pleased, but in most cases one visit to the burrows of the Tolis was enough. Only a few of their number bothered to learn the tongue of the shiny fox-men.

It was nearing sunset of the short Vulcanite day, when Jimson standing at one of the ports saw Warren and Yarbow running through the trees as if in mortal terror of their lives. Wendell was at his side.

"Good Lord!" cried Jimson at sight of the racing men, "Have they gone crazy?" His eyes went beyond the men, trying to discover if they were being chased by natives, but in the deceptive ghost light of the verdure it was difficult to see.

"They run from themselves . . . " said Wendell quietly. "Get them into the ship before any natives see them as they are . . . "

"What do you mean? What has happened?"

"Go, open the lock, I tell you!"

Jimson cast one more look out the window. The men had reached the clearing, but Warren had stumbled over a vine and sprawled on the ground. Instead of picking himself up he was rolling about wildly, clutching at himself, trying to reach a dozen places at once, but Yarbow stumbled forward unaware of his companion's antics, his face a horrible mask of twisted pain.

Jimson needed no further urging to get down to the lock. He passed a man in a corridor and ordered him to follow. Yarbow fell through the doorway as it was pulled open from within, but Jimson did not pause; he ran out to where Warren still squirmed in the throes of some mysterious attack. The poor fellow was almost gone when he reached him; and Jimson had to carry him, a dead weight, into the ship.

Beale had been summoned and was trying to ease Yarbow's pain, but the pair were beyond help. They moaned and screamed alternately, seemed unable to breathe; their eyes grew glazed rapidly. In half an hour Yarbow was dead, Warren followed quickly.

Wendell had a ready explanation. "Two days ago I saw them eat some fruit . . . I warned them, but they laughed at me. I've been watching them, but they must have slipped out this afternoon behind my back. Lucky they had sense to get back here without the natives seeing them die. You'll have to bury them in the dark." He turned and went away without another word.

Someone muttered behind his back; another began to curse this unnatural world. Beale demanded silence. Tomorrow, he promised, he would confer with Rafel about the mines.

In a world abounding with the heavier metals, the Tolis were a race possessed of little science. They used stone knives and hatchets, stone-headed spears and arrows. They knew fire, but nothing of smelting ores. *Cosmicite* was found in nuggets, and these they fashioned by laborious hammering. They had nothing that might be considered luxuries. Because of the nature of the planet they had no need for clothing. Everything beyond their limited comprehension was magic, every tree and bush had its god. The sun that lighted their day was the Great Leader; the spirit of the *cosmicite,* or *dasie* as it was known to them, was their second-best god, considered superior in many ways.

An arrow or spear-head tipped with a pellet of *dasie* went true to its mark regardless of the aim. The archer who failed to kill his enemy was impure of heart, therefore undeserving of the fidelity of the god! The same was true of food eaten from plates of *dasie.* If the food poisoned the diner, his unclean touch had vitiated the power of the god's strength.

True to his word, Captain Beale addressed Rafel the next morning. He managed to convey to the chieftain in the mongrel dialect the Earthmen were using to make themselves understood, the fact that there was a shortage of *dasie* in the land of the sun. He explained that he and his men might easily have taken as much *dasie* as they desired, without the men of Tolis being the wiser, but the ways of the gods were not thus. The *dasie* belonged to the Tolis by right of virtue, and therefore the gods, instead of taking what they wished by force, were asking as a favor an adequate supply of the precious "stone". The baskets Rafel had so openheartedly given were but a drop to their real need.

As he spoke Beale was watching Rafel narrowly. He saw the frown that came into the chieftain's face and knew he was treading on delicate ground. The coming of the gods to the fox-men was a great event in their lives, an unprecedented break in the monotony of the jungle, and thus far had cost merely three baskets of *dasie.* This demand for more *dasie* was different, and Rafel wisely knew it was a demand. Rafel had been witness to the target practice of the gods on the third day of their coming, and he was intelligent enough to know that what had been done to birds and trees could be accomplished on man.

Beale said a little more, but knew he already won his point. Magnanimously he gave Rafel until the following morning for his answer, knowing well enough what the answer would be!

And sure enough the first hint of the rising sun brought Rafel into the clearing. He began the ceremony with flowery protestation of undying goodwill, exhorting the captain to carry to the Great Leader word of his

worthiness. Then he was waving to his fellows who came bearing between them on its cloth the little statue they had seen the first day.

When the figurine was borne away Rafel gave his second signal. Only ten days before the coming of the "sun-boat" Rafel had been to the mines. And here came twenty men bearing on their heads well-filled baskets of white metal. The eyes of the crew of the *Adventure* glittered at the sight. Nuggets ranged from the size of peas to double the size of a man's fist. This meant vast fortune for them all, even after Wendell had taken his lion's share!

Forgotten were the mines, the possibility of even greater wealth, but not so Wendell. He could not forget.

Afraid the sight of the metal had robbed Beale of his reason, Wendell took the fore. He scarcely glanced at the baskets. Then he cried. "No, no, take it away!"

Rafel's surprise was no greater than that of Beale and Jimson. The men staring out the windows of the *Adventure* did not grasp what Wendell was doing. Beale and Jimson wanted to protest, but Wendell flung them both an eloquent glance from his heavy brows. Rafel was protesting, unable to comprehend. Not enough? He paused but a moment, waved again to his men and they went off—to return with twenty more baskets. Rafel looked to Wendell for approbation. The eyes of the others were starting from their heads, unbelieving.

And all Wendell did was to shake his head. "Take it away, all of it," he told Rafel.

Rafel struggled between two emotions, one of joy that the *dasie* was not to be accepted after all, the other . . . fear for the same reason. Beale and Jimson murmured protest behind Wendell, but he did not appear to hear them.

Instead he stood by stoically waiting until every basket had been carted away. In the *Adventure* men cursed, cried against Wendell, but unknown to them he had securely locked the heavy porte of the ship from the outside!

Now he gave his full attention to Rafel, to explain through the poor medium of the savage tongue what the trouble was—that the Great Leader would consider it a great sin if his messengers deprived the fox-men of their precious stone.

In answer Rafel grinned. Surely, he thought, the Great Leader would know there was more *dasie* to be had, that it was but a five-sun walk to the mines. He and his men could replenish their stores quickly enough. The Tolis gave with willing heart. Let the men bring back their burdens!

Still Wendell shook his head. He sought again to make Rafel understand. The *dasie* of the Tolis was of no use to the gods. It was, as all other "stone" useless. They accepted the original gift only as a token of good will, but could not use it. As the *dasie* of the Tolis was contaminated if touched by alien hands, so was the *dasie* defiled that had been handled by any but the gods themselves.

And this time Rafel comprehended it. He was abject in his misery. In his generosity he had not considered this contingency; he was only glad the gods had not struck him down in their anger. He must go now to discover when the spirit of the *dasie* would concede it propitious for a new expedition to start for the mines, when he and his fellows might lead the way.

Wendell had to be agreeable to that, and Rafel went away with a promise to be back on the morrow. Now he had to placate the men of the *Adventure* for his refusal of the forty baskets of *dasie*, pointing out that if he had his way there would be forty times forty baskets to be had, more than the *Adventure* could hold if they but listened to him.

The next day Rafel came to advise them they must wait two days before they could start for the mines; for so his spiritual aides had decreed. Wendell returned the original three baskets.

The men grumbled, but otherwise were quiet. They strolled about the village watching the preparations taking place for the march, particularly those of Rafel who had something in a pot that boiled without fire. And the chieftain was eating *cosmicite*. An open dish in the center of his burrow held a pebbly dust of it, and whenever he thought of it he would take out a small crumb and placidly chew and swallow it.

At last Rafel was ready to announce the start. To the men of the *Adventure* it did not look like much of an expedition. There were ten natives in the party—Rafel, the six *tucos* and three youngsters, sons of two of the *tucos*. In small sacks of woven grass each man carried a supply of sun-dried meat, and except for two of the boys carrying heavy stone knives to cut their path through the jungle, they were otherwise unarmed. Rafel carried several implements of his trade, one *tuco* carried a bowl of what turned out to be holy water. Their drinking water and supplementary diet of fruit would be found on the way.

Beale had expected to go with his men in the *Adventure* to take the natives with them to point out the way, but Rafel piously vetoed such a suggestion. First, he declared, the trek to the mines must be made in a spirit of humility, the "sun-boat" made too much racket, and the spirits demanded silence; second there was no clearing large enough to contain

the *Adventure* within many walks of the fields. No, they must go afoot as his forebears had gone afoot for a hundred generations.

This put a different complexion on things. It meant five days of marching in heavy leaden suits under the burning sun, the matter of carrying enough food tablets and water to last the entire trip, beside their mining implements. Beale tried to argue. The *Adventure* could make its own clearing a day's march from the mine, but in this Rafel proved adamantine.

There was a short conference in the *Adventure*. There would be no need for all to go; at most six men could do the work. They would locate the mine, take its position by sun and stars as well as landmarks, and bring away only samples, a small supply that each man could carry comfortably. Later when the natives thought they had returned to the sun, they would drop upon the mine, blast a clearing for the ship and load it with all it could carry.

It was decided Beale would stay with his ship. Jimson would take charge of the expedition. Five were chosen to accompany him: Arth, Morgan, Talbot, Ware and Petrie, the youngest and heartiest of the crew.

The trip would consume ten days of travel, and with a day stop-over at the mine it would mean eleven days in all. Against accident they would carry food in the shape of tablets and water in airtight canteens, each man his own share, a twelve-day supply. In addition to other things, Jimson carried a tiny wireless to keep in touch with Beale once they reached the mine.

It was noon before they could start and Rafel was impatient at the delay. The men's packs were hastily packed, but at the first stop that night they would straighten them out. Each man carried his weapons against unforseen dangers. It was with much misgivings that Beale saw them go weighted down like deep-sea divers. He managed to shake off his forebodings to wave cheerily as they disappeared into the trees.

Their direction lay opposite to the village, but for half an hour the men could still glimpse the towering outline of the *Adventure* through the trees; then they dropped into a low valley, and it was gone from sight. They were now entirely dependent upon Rafel and his garishly-tinted crew.

After a few hours under the brilliant sun, Jimson wished they might make the march in the cool of the night, but the fox-men feared the night with its ghostly shapes. The eerie appearance of the luminous vegetation coupled with the fact that the *yal*, a catlike creature, roved the night, forbade them stirring from camp with the setting of the sun. Instead they must travel beneath the hot sun; and there was little shade to be had amid that forest of narrow trees with their sharp, spiny blades of leaves.

The natives, naturally, were not discommoded by the heat. Whatever it was in their blood or chemical structure that permitted them to eat freely of the radium-impregnated food, also made the terrific heat of this world as nothing to them. The three youths cutting the path through the thick jungle seemed scarcely wearied after a day of wielding the machetes with which Beale had provided them to replace their own heavy stone knives.

4

UNDER JIMSON'S VIGILANT EYE his men husbanded their water carefully, drinking only four times during the day and then sparingly. At each meal (the natives ate four times during the nine-hour day) they ate two of their food lozenges. Health-sustaining though they were, however, they were none too appetizing and had to be taken with water to wash them down. All in all it was grueling work to push through the fetid jungle; but these men were accustomed to work of this sort. They had chosen this life in preference to sitting behind a stuffy desk in their own stuffy world, and this was not their first experience in an alien jungle. The new thing was the terrific furnace heat.

Heads down, eyes turned to the ground, sweating under heavy suits, averting eyes from the luscious fruit that hung invitingly everywhere in clusters from the trees and vines, the men pushed on. They turned their backs perforce upon the water when camp was made beside some creek, river or small lake. They talked among themselves of other things when the strange drilling of the webe bird, a creature like a woodpecker, became too nerve-wracking, and they counted themselves lucky that the swarms of insects rising at every step from the rich mold underfoot could not find them through their heavy garments.

Rafel, following on the heels of Jimson, listened reverently to the chatter of the Tellurians. His heart swelled at the sound of the songs, which they sang now and then. Since the spirits had been agreeable concerning the coming of the gods to the abode of the *dasie,* he knew no qualms. He appreciated the fact that he was deeply honored in that the gods had sought him out to be their guide and friend. The Tolis never lifted their voices in song, but by the time the party reached the mines the fox-men could repeat the words and hum the tune of Jimson's favorite.

It was on the noon of the fourth day that it was discovered that Ware had only brought one canteen of water; in the excitement he had left the others prepared for him. It was a blow to all six, for it meant the rest would have to share their precious store with him. They managed to

laugh it off, and make ribald jokes for the benefit of the culprit, but Jimson worried. An accident like that could cripple the whole expedition. It was well that they carried an extra day's supply.

Then they came to the mine. The "mine" was situated in a cave of an underground river. The cave's entrance was cleverly hidden, but before it could be opened Rafel and his fellows had to perform rites to propitiate the god. This solemn ceremony included a soundless dance, the sprinkling of holy water around the surrounding territory, and a long silent prayer in which all nine shiny men squatted in a row, heads touching their knees for three hours. Using this time to their own advantage Jimson and his men crept over the ground, carefully taking their position by the sun, studying landmarks and the lay of the land. They explained their absence as having to do with their own rituals.

At last, to the satisfaction of everyone, the cave was opened. They went within, stopping every few feet while Rafel said prayers and supplicated the spirit residing herein. The cave was almost as brilliant as day, due to radium salts embedded in the walls and ceiling; and by its light they saw they were on a shelving beach of a subterranean river. Its banks for several hundred yards in both directions were strewn with nuggets of *cosmicite*—nuggets of every size, many as large as a man's head. They could see the metal shining on the bottom of the river, lying in full sight, waiting for the picking!

Jimson and his men were filled with boundless joy. Because of the double curve of the river at this point they could see but a small portion, and could only guess at what lay the full length of the river, and at its source. It was unbelievable. They wanted to fill their sacks immediately, to rush back to Beale with the news, but Rafel was not through with his rites. It was dark outside when he finished, and that meant they must eat, sleep, and await the new day before they might gather the metal. It was really four days before Rafel was ready to return to the village.

A different prayer had to be said over each nugget as it was plucked from its bed. Then Rafel insisted that each man take away in his knapsack as much as he could carry! He stood by while each bag was filled, making careful estimate of the weight of each man in proportion to how much he could rightfully bear on his back. With each man laden down there was more prayer, and the ceremony of putting the lid back upon the cave's mouth. This took a full day, for Rafel had to be satisfied that that the cave entrance was safe from detection; and another full day of prayer before they could dare take their departure!

Jimson was beside himself with chagrin long before that, and he was

deeply worried. His men were already on short rations; prepared at the most for twelve days, they had been out nine days already and the return trip still to be made. He could not believe Rafel had purposely not mentioned this enforced stay-over. On being asked how long the journey would take he had truthfully told them five days each way. The natives did not care how long the entire trip consumed. Was there not food and water in plenty all along the way?

And there was the matter of water. Ware's shortage made their predicament worse. Water inadequate for five had to be divided among six. And to make matters worse Jimson could not communicate with Beale. The wireless was useless, there was too much interference. All he could raise was static; the radioactivity of the planet made wireless impossible. The men waved aside his fears. "We can do on four lozenges a day instead of eight, and we'll go easy with the water. Don't worry, Bill, we can't lose out now . . ." They had known times as bad as this before.

At night Jimson lost good hours of sleep tinkering with the radio. If only he could reach the *Adventure* . . . it could meet them halfway. But he was without success. Then they were ready for the return. Some of the men surreptitiously dumped a portion of the *Cosmicite* from their knapsacks, but the others wouldn't let a single pebble go. Beale had promised they could keep all they brought with them without counting it among what was to be taken aboard later.

During the first day of the march they showed no sign of fatigue. They sang and joked as they strode along behind the machete wielders. They were not returning the way they had come. Rafel explained that to do so would mark their path too plainly for lurking enemies; other tribesmen were always on the lookout for new *dasie* mines; hence they struck off on a slightly changed course, and on the second day arrived at an impassable river!

It meant building a bridge to cross it. The fox-men had become highly excited at the sight of the vicious river; they claimed the god of the river was angry and had to be pacified before they could cross!

Half a day was spent in prayers before trees were felled to make the bridge. That in turn had to be tossed into the river once they were across. Here the Tellurians suffered their third misfortune. As they crossed the rude bridge Talbot lost his balance, fell, and was gone before the others could come to his aid. He toppled into the torrent and was swept from sight immediately, drawn down into the whirlpools, broken on the ragged rocks a quarter of a mile below.

Jimson placated Rafel with the explanation that Talbot had suddenly

decided to return to his heavenly abode in the sun via the river. The Great Leader had recalled him. Eager to believe, Rafel accepted the story. He was awed beyond measure to have been witness to the passing of a god!

It was a pity Talbot had carried his water with him, however. Jimson had told him he was carrying too much *cosmicite* for his own good; that was perhaps the reason for his fall. Morgan averred Talbot had picked up nuggets discarded by others.

Altogether they spent a day and a half beside the river.

The next day they found their canteens dry! With all their precautions the terrific heat of the unshaded sun had evaporated all that remained. The sun winked out at last, lay low on the horizon. A cool breeze stirred the tops of the jungle trees, relief of a sort. The men knew what they faced. Four days under a pitiless sun, four days without water and without food, since they could neither swallow or digest the food tablets without the aid of water. Hunger was not the worst; it was the thirst. And the natives had camped them beside a shallow, gurgling brook . . .

Somehow the five fell asleep, but morning was worse. Above all they must not let Rafel and his crew know the truth. They must keep upon their feet steadily, not dare to stumble. There was no singing in the line that day, and very little talk.

With the third stop of the day, during which the fox-men ate their fruit and slaked their thirst Jimson noticed a spot of blood on Ware's lip. He wondered about that, so that he began to watch the other until he saw Ware put a wrist to his mouth.

Pulling Ware to his side he saw the truth. There was fresh blood on his lips. The man was sucking his own blood. He whimpered when Jimson accused him. "I cut my wrist on a vine a way back, and it . . . well . . . it sort of quenches some of my thirst . . . "

"You fool," moaned Wendell, "you fool!" And he watched Ware for the rest of the day. It was bad enough to think of a man doing such a thing, but Jimson feared also that the open cut would be his end, the poison from the plant that had made the cut . . . would it prove deadly?

In the next few hours he forgot Ware's predicament in his own. Water, water. God, would this never end? Like an automaton he found himself pushing one foot forward . . . then the other. The heat, the odors of stinking jungle. Swarms of insects rising in clouds in a man's face at each step. The rank odor exuded by the large fleshy leaves of the ground creepers. Webes drilling on all sides. Brightly-plumaged birds darting from their coming; paining the eyes with the slash of their color.

Food! Fruit on every side, hanging in clusters within reach; fat, juicy, peach-like gobulars, scarlet cherries, purple plums. Luscious and poisonous. Tempting a man to stop, pluck and eat; to quench the thirst in their juice and let consequences be damned!

But one remembers Wendell's white hair, Warren and Yarbow. A monstrous planet this. Wrapped in beauty, festering in poison. And the water. God!

Now John Arth stumbles ahead. He's reeling, unable to stand the gaff. Ah, well, what's the odds . . . what if Rafel knows we aren't gods? We'll die soon enough, we'll die on our feet of starvation . . . thirst . . . with food and water in full sight and reach of the hand. Must try to get Beale on the wireless tonight. Last chance . . . then . . . then to give up, welter in the poisonous water, sate one's self with lush fruit. Metal. Riches. All for the sake of a white metal dragging at our shoulders, eating into the flesh, burning a deep scar on our consciousness.

It's night again, blessed silvery night filled with luminous shapes, the ghost of all those who have died for thirst in this life. Sneering at us, jeering . . . Pointing long fingers at the water beside which the natives have camped for the night, beckoning for us to come; partake of the liquid flood; bask in it; to live again if only one moment of exquisite joy.

Was ever there a world with more water? Since leaving the *cosmicite* fields the party had followed the course of a river, the same that had swallowed Talbot. Sometimes they lost it, sometimes they crossed it on a worm-eaten log; darting from stone to stone. But this was a lake beside which Rafel had camped, possibly an inlet of the same river, but it seemed to stretch for miles—cool, limpid, inviting . . .

"I can't stand it anymore, I can't, I can't." That was Morgan. "Water, water," he moaned, "water, please." Jimson remembered the immortal verse, *Water, water, everywhere and not a drop to drink!* So had the ancient Mariner felt . . . only not so bad . . . he could not have been so thirsty . . . surely . . .

"Quiet, Jack, you'll arouse the natives. That Rafel's smart. He sits close to us at night to listen to us talk, repeats words to himself. Please, boy, keep quiet." How fuzzy my tongue is. My words are thick in my ears.

"I can't. I tell you, I can't stand it any more. I'm dying of thirst in sight of all that water . . . "

"We all are. We're hit hard."

"How d'we know it's *all* poison? Maybe it was only in that place where the *Corsair* landed . . . maybe just one little pool . . . "

"No . . . no, it's the whole planet, the radium . . . too high in solution . . . and there were Warren and Yarbow, Jack." He sighed. "Please, please, have patience. Rafel hurries home. We'll be back to the *Adventure* in three days . . . "

"Three days . . . three days!" The last was a shriek. "We'll be dead by then . . . all. I'm dying now, Ah, I know!" his eyes were suddenly crafty . . . "I'll show 'em! I'll take my clothes off . . . I'll stand in the lake . . . it won't hurt . . . I'm burning up, burning up . . . "

"No, no Jack. It will kill you. Even to remove your clothes exposes you to the emanations."

"I won't drink . . . and only for a minute . . . just to stand in it . . . "

"It'll seep through your pores, it will burn your skin . . . it will kill you . . . the damned, unnatural stuff!"

Jimson tried to hold the other back, to prevent him from flinging off his clothes, but Morgan was strong with desire, and Jimson was weak.

He watched with heart in his mouth. Morgan was so young, just twenty-four. Perhaps . . . if he'd be content with one dip, hurry back into his clothes. Ah, he was returning.

Morgan was revived. "It's marvelous," he averred. "I feel as if I'd eaten a full meal, and my mouth is no longer parched. Come on, all of you. See . . . I'm strong again!" He turned a neat cartwheel for their edification. Jimson knew. It was the radium. Of course Morgan would feel good for the time being . . .

"No, it's suicide!" Jimson sought to hold the others back, harangue them, but they paid him no heed. Sitting on the bank he watched them disport themselves in the water, his own mouth so dry his tongue was like a piece of flannel. Every few minutes they tried to entice him to join them. He was tempted. "Why not?" he asked himself. There would be relief, instant relief. What did he care; death was on the way, regardless. Better death in the cool serenity of the lake than on that sun-beaten hell that was the way back to the ship.

They were far out in the lake, several hundred yards distant when with a wild call they turned in unison to swim back to shore. Unconsciously Jimson's weary eyes numbered them . . . one, two, three . . . one, two, three . . . and there should have been four! He jumped to his feet, scanned the lake on all sides, but with the exception of those three bobbing figures racing toward him the lake was empty!

Arth wasn't out of the water before he began to yell. "Ware . . . went down . . . "Then they were on shore dripping water at his feet. "He went

down like a stone . . . suddenly," they told him. "We dived for him, but he was dead already!" They were shivering even though the night was warm.

What was the use of saying "I told you so!" Death was riding their shoulders already. Nor did he tell them about the cut on Ware's wrist that was possibly the real reason for his early death . . . that and the polluted water. Tomorrow . . . if they lived . . . they might be tempted to ape Ware.

Then Jimson saw Rafel, a luminous figure standing beside a tree watching them. Did he guess? Did he know? Had he understood their words, their want? Did he see that one of their number was missing again? Could he know how they suffered?

5

WITHOUT A WORD, Arth, Morgan and Petrie donned their clothing again. They dropped Ware's garments and his load of nuggets in the water. They lay on the ground close together as if seeking safety in their numbers. Jimson turned to the radio again. It was useless. He grew drowsy, his head nodded. He dreamed he too swam in crystal-clear water where there was no shore, where he kept on swimming, swimming . . .

With the arrival of morning he found the three still alive, unharmed it appeared. They were ready for the march, their eyes bright, their bodies filled with new vigor; their fear of the previous night was gone. On the march they gave surreptitious help to Jimson over the roughest part of the trail as the natives cut through the heavy growth that seemed to spring anew with their passing.

The day was a repetition of the past one, the nerve-trying sounds of the jungle, the myriad insects, the awful heat of the sun beating down upon heavy helmets, the bands of their knapsacks biting into their shoulders. Later Jimson was to wonder how he had ever managed to cling to the *cosmicite* as he did.

Then came the mid-morning halt. He noticed that Arth was groggy. He had dropped to the ground with a heavy thud; lay where he had fallen, eyes closed, mouth strangely grim. Morgan and Petrie were almost as bad. Arth groaned, but the others set their teeth against the animal expression of his body. .

When the signal came to start, Arth could not get up. He moaned, but was unable to speak. He lay there staring up into Jimson's face, his eyes big and glassy like the eyes of a dog Jimson had seen die once.

(Illustration by Paul)

Jimson leaned over Morgan and picked him up. He bent weirdly in the middle. "It's in the bones," he explained.

Morgan and Petrie just stared at them, gritting their teeth so hard their jaws made clicking sounds. Jimson tried to bring Arth to his feet. He was a sack of meal, boneless in his grasp. He had to let him fall back to the ground.

"He drank some of it," Petrie said through stiff jaws, meaning the water of the lake.

Rafel and his men stood by watching, curious. They saw the glazed condition of Arth's eyes; they knew death. They glowered. Then Rafel spoke. "He die . . . like men!"

Jimson hesitated, then shook his head. "He die like man because he sin," he said in the jargon they used to make themselves understood by the fox-men. "God eat only food and drink water of god!" He tapped his knapsack significantly. "If god eat, drink, food meant for man he die . . . for then . . . there not be plenty for man!" He could hardly force the words from his swollen lips, but he thought his answer was masterful. Let the beggars get around that!

"The one who die in water . . . he sin, too?" asked Rafel. Then thoughtfully. "There plenty for god and man!" and waved an eloquent hand to take in the fruit-bearing trees, the glimmer of the river a hundred yards to the right. Jimson's eyes following his hand bulged at the sight; he forgot for the moment what he was about as he too considered the plenitude of water in this wild land. He caught himself, hurried to cover his pause.

He shrugged his shoulders. "Great Leader say different. He say it taboo . . . "

Rafel, whose land suffered with too many taboos, could appreciate that, but by listening to the men during their long days of companionship he had learned a smattering of their tongue. Now he said: "You eat all food . . . " here he tapped Jimson's knapsack . . . "your water — gone. You die for water . . . and gods no die! So it is told!"

Jimson wanted to cry out, to tell him the truth, to find sympathy in the beady eyes before him, but he dared not. Rafel was a mighty man among his kind, he would not endure being made a fool of! He would lose face with his people were it known the men had but made a pawn of him.

"We gods!" Jimson was belligerent now. "You know we gods . . . or you die!" He tapped his pistol. It was the last chance, for Rafel had seen what the pistol could do. He would at least believe in that.

The fox-man nodded. "We believe," and he ordered his men to bury the now dead Arth, for Arth had died as they argued. The natives whispered among themselves at the decay already setting in upon the body. It rotted before their eyes. They had never seen the like. This if nothing else convinced them that these men were indeed different than they. The march continued.

Now it was Jimson who seemed strong in comparison to the others . . . Morgan and Petrie who were weak. They stumbled at every uneven-

ness of the road. At last Rafel came to Jimson's side. "They die . . . too!" he muttered. Jimson nodded, not daring to speak.

"You men . . . no gods!" The chieftain spoke with real conviction now. "Gods no die. You men like us. You come from another place.* I listen, I know. Other place!" he said accusingly.

Jimson stammered, "Sure . . . we're men. It's this damned poisonous world . . . it's . . . " he realized what he was saying . . . but he was speaking English. Perhaps Rafel could not understand after all.

"Men like us . . . you . . . you . . . " but the fox-man could not find words to express his thoughts. He knew but one thing: He and his people had been betrayed. He called to his fellows, halting their march, and broke into a flood of liquid tones that Jimson could not follow. Their faces were somber.

Suddenly Morgan pitched to the ground, felled like a tree. Petrie was easing himself after him, unable to sustain his weight any longer. He had dropped his pack somewhere behind. Rafel gave them no heed. He was saying to Jimson, "You make lie. You spoil magic . . . the *dasie* cries for revenge."

Rafel was working himself into a black rage, but Jimson found it in himself to sneer. "Well, what does it matter?"

"Men from other place. You make sky-boat swim ocean between places. You want *dasie* . . . you act like gods to fool us. But you no return. You no tell others. My people . . . they make you die!" A bow and

*It is to be questioned if Rafel truly understood that they had come from another world. The Tolis' word for world is "place"—but they use the same word for any part of their planet which is foreign to them.

Giant Insects are impossible—yet, a swarm of giant insects appeared in New York City! How? Don't miss this fantastic novelet.

THE MONSTERS

by Murray Leinster

in the March 1968 issue of

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arrow appeared in his hands as if by miracle from its holder at his back. His companions were armed likewise, an evil circle of *cosmicite*-tipped arrowheads pointed at Jimson's heart.

He dared not draw forth his weapon, and he was afraid. He who had faced death for three days was afraid of it in this form. "Wait," he said. "Rafel wait! I not lie, but not tell all of truth. Talbot . . . him god; Wendell and Beale who wait in big boat of the sun . . . them gods. We . . . others . . . we not gods . . . we Men-gods . . . men who serve gods. You understand? Someone must serve gods . . . like *muli* serve men. You understand?"

Rafel hesitated. Jimson could see in his eyes that the poor fellow wanted to believe if only he dared. He needed to save his face. He was wavering now. "You fool us one time, maybe you not tell all of truth now. You sin against the *dasie* . . . the *dasie* wants revenge!"

"No, no, the *dasie* is unharmed. It's they who die . . . " he pointed to Morgan and Petrie. "The taboo . . . they broke it. I not die because I not sin. Wendell, Beale true gods . . . they not die. This I swear by true gods who see men sin.

After a minute long pause Rafel nodded, lowered his bow. "We wait . . . Beale, Wendell must show them true gods!"

Weak with relief Jimson wanted to cry, but he was a dried-out husk. He turned sadly to his companions. Morgan was breathing with difficulty. Petrie had placed himself flat on his back. Jimson leaned over Morgan. He picked up one arm to feel his pulse. It bent weirdly in the middle of the forearm. Petrie saw it. "It's in the bones . . . it eats . . . away . . . the lime . . . " he explained. Morgan's eyes had glazed; they stared at the brilliant swollen sun directly without seeing. Petrie was going too. A few minutes and he could not raise his chest to breathe or moan.

Rafel's men refused to help Jimson bury his dead, and he was too weak to scratch out even the shallowest grave. He wanted to say a prayer, but his cracked lips refused utterance. He had to leave the pair where they had fallen, boneless things, decaying already. Soon they'd be devilish masses of putrefaction shunned by the meanest scavenger of the jungle.

The natives paid him no heed as he stumbled on after them. The machetes flashed in the sun. Rafel no longer waited for him to pass on ahead.

On, on, push on! Swing the damn machetes. On, on, one step, now two, a third and another. What if these weighted feet refused to obey? The *cosmicite* on his back . . . it was dragging him down . . . Lord . . . he didn't have the strength to pull his arms out of the straps. If there

were only some water, a drop, a thimbleful. What is that? A slow-moving river. Water! *Water!*

How thick the grass has grown, vines pull at arms and legs . . . why . . . the machete wielders have gone . . . gone. Where . . . oh God . . . was he? Ah, yes . . . the water . . . water . . . there ahead!

Funny noise! Crack . . . crack! Webes didn't make a sound like that. Yet familiar . . . strangely familiar. Jimson! Jimson! Why all the jungle is calling my name. Jimson! What a joke. Why there they are. Talbot, Ware, Arth, Morgan, Petrie . . . coming to meet me. Good fellows . . . they wouldn't leave a pal behind. Not them. And we'll go swimming together . . . all of us this time . . .

Funny . . . lying here . . . hurry . . . hurry can't you see the water ahead . . . not ten feet away. Why only animals crawl . . . what's wrong? What's the weight on my back . . . something lying heavily on my back, holding me down . . . oh yes . . . my old man of the mountain . . . the *cosmicite* . . . the fortune with which to buy a spaceship of my own. The sun . . . it's gone . . . the world is black . . . this then . . . is death . . . death. Silly to have feared it. It's cool . . . clean.

Water, water! Oceans of it running over his mouth. Feeble fingers reach to catch escaping drops . . . the flood withdrawn. More, more, I say! More!

"Easy, easy, Bill!" Funny Beale's voice here. "Take it easy like a good fellow. There, a little more now. You're all right, old man!" Beale . . . good old Beale . . . don't know he's too late . . . don't know that I'm dead!

"I'm dead . . . a dead man . . . only a man . . . not a god!" Jimson could hear that strange voice at his ear. It took several moments to recognize those hollow tones for his own.

"You're not dead, though you were darned near it. The others, Bill, what happened?"

"They weren't gods . . . they sinned . . . they bathed in the lake . . . their bones . . . dissolved like . . . water."

"I told 'em you were god . . . not us . . . "

"Yes, I know. The fellow Rafel took a pot-shot at me. Lucky I was wearing my lead mesh shirt. The soft tip of the *cosmicite* blunted and the arrow fell to the ground. They are certain now that I am a god—but what a price to pay! Five men gone in one blow, and all of the *Corsair's* crew except Wendell . . . you almost . . . "

"I've got the stuff, Captain. Look—sixty pounds of it and it's pure . . . "

"Yes, Bill, you're a wealthy man now. You can buy an estate and marry a wife and play at life—but you won't. You'll go on and on, looking for new fortunes, peeping into all the strange corners of the universe . . . and if you're lucky you'll see many new things and make many fortunes. But one of these days, in some strange jungle like this, it'll get you . . . and you'll die like the rest of us—with boots on. Wealth, fortune, Lady Luck! It'll get you.

"And the others, men who will come after us to Vulcan. These poor, untutored savages will fight to preserve their rights. Thousands will die before they learn their lesson; the rest will become slaves to dig out the ore. Our own men—poor devils—they'll sweat and toil in this noisome jungle, under the blistering sun, living on food lozenges . . . on water so filtered that it is dead. Craving baths in cool, inviting lakes, tempted by the growing fruits on the vines. Some will succumb—and their bones will rot!

"Riches! Man's damnable desire to conquer, to nose in where he doesn't belong. In the future, men will point to you and me. They'll say . . . 'those pioneers . . . they were men!' Bah! Sheep! That's what we are . . . pigs for the slaughter . . . pigs for the slaughter!" A wild laugh broke upon the jungle.

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WORLD-WIDE ADVENTURE

The Dragon-Kings

by L. SPRAGUE de CAMP

About the margins of the lush lagoons,
During the ages that the dragons reigned,
The sauropod, through endless afternoons,
Perambulated, huge and tiny-brained,
On swampy plants of somber green sustained.
His monstrous, snaky neck and little head
Arose and dipped, as if by cables chained,
As, half-submerged, upon the reeds he fed;
He lumbered down the years with elephantine tread.

Along the sandy shores of lakes and seas
Grew palmlike cycads, gaudy blooms displayed
Upon their barrel-trunks, and fernlike trees
With fronds like frozen jets of liquid jade.
Upon the sand, like logs at random laid
Slept crocodiles. Above, through twilit air,
There soared and swooped in aerial glissade
A horde of little lizard-bats, on bare,
Sharp-pointed, leathern wings, pursuing insect fare.

Like some reptilian fiend, the carnosaur
Through woods of redwood, ginkgo, larch, and pine
Did stalk his prey—some hapless herbivore—
With head asway and golden eyes ashine;
Thus reptiles swarmed the land and air and brine.
A hundred million years they ruled, then died.
We hairless apes, who think ourselves so fine,
Should not condemn the dragons in our pride
Until we shall, one-tenth as long as they, abide.

THE INDIVIDUALISTS

by LAURENCE MANNING

(author of **Voice of Atlantis, Seeds From Space**)

And on his fourth awakening, Winters found himself in a society where every man was for himself, and every man's hand against his fellow, and every man a genius!

AT THE ESTABLISHMENT OF MEANUS, there was **holiday.**

Little Vard climbed to the top of the partition wall and would have fallen had he not been found by some of the older children. Trogly, who was twenty years of age, had coolly taken possession of a living machine and had set off to see the great wide world—a project he had been impatiently awaiting, for the past six months, to carry out at the first opportunity. So the responsibility of the of the "household" fell upon young Bork and the girl, Farinda.

In the year 20,000 A.D. this was less difficult than one might think. In the first place food and drink were automatically produced by the living machines at the mere touch of a button. Control of temperature and humidity in the rooms was similarly arranged for, by the almost indestructible atomic motors in the power room.

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Hugo Gernsback's science fiction magazines ran considerably more sociological speculation stories than they were given credit for at the time. LAURENCE MANNING's present series is an example. The first tale in the series, *The Man Who Awoke*, presented a conservationist society; the second, *Master of the Brain*, a benevolent dictatorship; the third, *The City of Sleep*, an escapist world; and now, in the present awakening of Norman Winters, 5000 years after the exodus from the city of the dream machines, we find that the pendulum has swung to the opposite extreme presented by the strait-jacketed world of the Brain—a super-scientific anarchy, raising the question: What ought to be the limits of personal liberty in a world of abundance?

There was little left, except the education of the other children and the sound-and-sight library made this task a sinecure.

"But where has Meanus gone?" Farinda asked Bork.

"Surely you remember in the history record we read last week about Winters—the man from the past?"

"Yes—I do. He went to sleep eighteen thousand years ago and woke three times. He is to awaken again this year."

"Exactly! And Meanus wants to bring him here to study and perhaps to breed from."

"Oh! But they don't know where he is sleeping, do they?"

"They know where the first city was located after the Exodus. He was buried beneath that city somewhere."

"But then . . . when will Meanus be back?"

"Perhaps not for several days. We had better look over the breeding racks this afternoon."

The two young people walked slowly through the building, looking in at each room—for there were some dozen children to be accounted for—and ended their saunter at a locked doorway, which they opened. Inside was a set of shelves on which rested huge glass jars, and in five of these great containers were babies less than a year old. They were supported on cloth stretched taut between two rollers which turned slowly beneath them. Even as the two entered, a fine spray of warm water commenced to fall in each jar, for it was time for the bath. This was followed by the hiss of warm air jets and, now dry, the infants began groping for the feeding tubes and commenced sucking nourishment from these very contentedly.

One of the five, however, did not react so normally and Bork frowned, seizing a controlling lever that permitted him to move the tube about inside the jar. He succeeded in getting the end of the

tube into the baby's mouth but after a moment it spat the thing out again; and, although no sound was audible outside the jar, it evidently was crying.

"I can't imagine why Meanus keeps this one," the boy said calmly. "It has been abnormal in feeding ever since it came from the incubator."

"Oh, I suppose he has had the trouble of raising it so far and now wants to see what its reactions will be before he destroys it," responded Farinda. "After all, he only has five experiments under way just now."

Bork grunted in reply and peered a moment through the glass peephole set in the wall of the incubator. Here a dozen bottles of varying size could be seen, filled with liquid, and in each a human embryo in progressive stages of development.

"Everything seems all right here, as usual. Let's get back to the library."

But Farinda was staring at him with a peculiar expression in her eyes. She shook her head obstinately. "You've been doing the things you wanted to all day," she said. "Now I'm going to do what I want to do—and I'm tired of having you around."

Bork shrugged indifferently and set off down the corridor while the girl waited until he was out of sight and then set off about her own affairs. For the child is father to the man and even the child of this age found her own company preferable to any other at times.

Meanus, a thousand miles away—bull-necked and swarthy, —was grinning cynically in front of a sign posted on the wall of an ancient ruin. His parted lips revealed the pink and white gumnails that had long ago replaced human teeth.

"Adults are warned that the man Winters is for my laboratory," he read aloud. "If Hargry thinks that I shall pay any attention to such nonsense he must be mad! " he exclaimed, and looked around him suddenly for he had heard a slight noise. It was a stranger he had never seen, seated in the midst of a huge and complicated structure evidently capable of flight, for it had arrived through the air.

Meanus made a step to the side of his little airship and two beings stood watching one another in silence.

"And do you also want Winters? " asked Meanus savagely.

"I wish to see him and examine him for a moment," replied a woman's voice. "And you? "

"I want to try some experiments with him."

"Ah! Well, we may have to wait some time— his awakening is not known to the hour, by any means."

The great machine rose lightly into the air and settled down some hundred yards or more away, beside a group of low stunted trees. Meanus grunted impatiently and set about exploring the ruins. The ancient walls were gray and weather-worn and inside the decrepit buildings there showed accumulated dust and debris in all directions. But there was a full square mile of ground to cover and presently the hopelessness of his search caused Meanus to pause and return to his vessel. Time enough, he thought, when Winters emerged into the sunlight.

The ship he had arrived in was perhaps twelve feet long and four feet wide—just high enough to sit upright in. In the tapered tail was storage space and set in the roof were the two vacuum wheels that revolved at terrific speed and set up a continuous suction drawing the vessel upward. The atomic motor was insignificant in size—six inches square—but rated nearly two thousand horse-power and ran for a week on a few ounces of powdered rock. Meanus entered the cabin and sat impatiently in the pilot's seat looking out at the ruined city through the observation ports.

So it came about that Valendum found two people waiting when *he* arrived. He had come straight from his breeding laboratory intent upon securing the ancient Winters for his own purposes—which were not precisely conventional. There was a tank beside his laboratory—a huge affair two hundred yards long. In it there swam queer half-human things with gills. It was the glorious ambition of Valendum to breed a race that could people the waters of the globe even as ordinary humans peopled the land; and to this end he wanted to experiment with embryos descended from Winters, whom he considered much nearer in blood to the original amphibians than any human material with which he had yet been able to work.

Valendum recognized the airship of a brother biologist and promptly dropped a bomb upon it. The explosion threw dust high into the air and tore a ragged hole in Meanus' vessel—but did not cripple it. In five seconds the two airships were circling each other high in the air and trying to bring heat rays to bear. So it happened that neither saw the approach of Hargry . . .

It was perhaps only natural that the biologists were chiefly interested in the advent of Winters. To a chemist or a physicist or

a musician he was merely a famous savage strangely come alive from the dark ages of ancient history. To the biologist and breeder of humans he was a new strain of blood—a prize worth fighting for. And in this day and age to desire was to seize and the rights of others were the concern of others. It was a world of giants—for gods. Little men had no place or joy in it—if indeed they ever were permitted to be bred or, by chance once bred, if they were allowed to reach adult stature. For breeders seldom released for the observation of others any humans who could be termed failures.

Now Hargry was at once the most ruthless and at the same time the most able of the experimental biologists. He it was who had bred Dagla—the curious genius who, at the age of twelve, had designed the great fighting machine in which Hargry ventured abroad. Nearly a thousand feet high it stood on three steel-truss legs that could carry it over the ground a hundred and fifty yards at a stride, under the impulse of its powerful atomic motors. In a steel palace at the top Hargry directed his machine and, if he wished, ate and slept there in perfect security and comfort for weeks on end.

Hargry wanted Winters both for breeding and, after that, for the operation table that he might thoroughly satisfy his curiousity as to the evolutionary changes produced by the last twenty thousand years. He had been here a week before and, after an hour's wait, had posted his claim and departed. Now, to his annoyance he observed three people at the ruined city and he hastened his stride.

In a lead-lined chamber fifty feet beneath the ruined city the X-rays and ultra-violet lamps had been burning for three days now and the wax-faced figure on the couch had been stirring once in a while. The medicine tube had pulsed twice with its measured flow of stimulants and finally Winters' arm raised weakly and pushed it away from his mouth, where it had rested for fifty centuries. He sighed and opened his eyes wearily. For half an hour he lay there quietly watching the ceiling and with the light of reason once more glowing behind the gray eyes he swung his feet to the floor and stood shakily.

The three days of drugged sleep and the nourishing stimulants had worked their miracle in his wasted tissues and he felt his strength returning slowly as he procured clothes from the vacuum

box and opened the door of his lead-lined chamber. Once more the old thrill of discovery ran through his veins. Up above were fresh scenes — ready for him to study and puzzle over.

Fifty feet he climbed up the steps of fused glass and pulled the little lever that had been arranged for him by his long-dead friend Eric. Instantly a crack of light appeared and widened into a square opening through which he climbed slowly and laboriously. He stood in a small room, floored with dust, and from mere instinctive caution walked over to the corner of the room and rested his foot on the floor to see the great open slab slip gently back into its place. He marvelled at the perfection of the fitting, tight after all these centuries; and idly drew his cloak over the dust to efface the marks, and found to his surprise that he could not tell where the crack had been.

Unsteadily he went into the next room and stood at the door blinking at the strong sunshine and marvelling at the ruined and neglected appearance of this once new and thriving city. Once more, he reflected sadly, had a new group of friends come into his life and gone on to leave him mourning them thousands of years afterwards. But more practical thoughts came to mind. Here was a long deserted city. He had scant food and no means of transportation. He must set off immediately to find people who could supply his lack.

He had watched this city being built and, of course, knew every street of it; so he had no hesitation about his course and set off along an avenue and turned into a great square. As he did so he heard a great explosion in the air and turned, startled to see low over the buildings on his right, a very Eiffel tower on legs rushing toward two airships with great coiled tentacles half stretched out to seize them.

The airships, he observed, were more intent on fighting each other than warding off the attack.. The steel structure seized one and threw it crashing to the ground and not till then did the other hurl an explosive at the giant and commence circling around as through preparing to attack. Even as Winters gazed, mouth open beneath the unkempt hair that covered his face, the second airship came a little too close and was struck by the tip of one flailing tentacle and broken in half. It fell out of sight and a terrific explosion sent up an enormous cloud of dust halfway to the giant's waist.

But metals were wonderfully strong in those days of mechanical perfection. The first ship, battered and broken, was still capable of flight and rose limpingly out of the dust cloud and made of west-

ward with the gigantic machine after it in hot pursuit, for it moved slowly and at a low altitude so as to suggest to Hargry an easy capture. As a matter of fact, it was quite ten minutes before a flailing metal tentacle sent sent it to the ground where a great leg crushed it shapeless.

Winters, in the meantime, cautiously approached the scene of recent combat and stood outside the area of buildings gaping at a great hole in the ground. The dust had settled on the trees nearby making them grayish white. Not for a minute or two did he notice the woman in the great living machine. Her calm and peaceful face allayed his first fears and he approached closer, while the woman studied Winters with great attention. Rods and wires and shining discs radiated from her seat. The machine spread around her for a dozen feet on either hand. Upon closer view the terrific complexity of it all was still more apparent. It was a maze of meaningless apparatus to Winters. The woman nodded her head suddenly.

"This puzzles you," she decided, as if thinking out loud. "Now why should it? What could be simpler? Compared to the same apparatus in your own time and country it is a marvel of simplicity!"

"The same apparatus—in *my* time?"

"Yes. You called them cities," she explained, "and that is essentially what this is. You had many thousands of people in each city, it is true—I suppose you could not afford many cities? —while we have a city for every inhabitant. But otherwise they are, I should imagine much the same."

Her hearer was making distress signals—amazement written on every feature of his face. "How is this thing a city?"

The stranger stared; then frowned. After a moment's silence she smiled again and nodded her head.

"Some of our research historians have held that you did not understand your own institutions," she said. "Most of us thought that rather a far-fetched idea. But evidently it is perfectly true." She looked hard at Winters. "I find it remarkable to think upon," she said.

"What then is a city? A place for houses to collect people? Not at all. It is a machine—a complex thing, almost alive in the animal sense of the word. Power is radiated on copper nerves—water travels through underground arteries—food passes through the

kitchens and is cooked and travels to the proper citizen needing sustenance. Telephone and television connect the separate units into a whole—even as nerves. This is a city in its broader aspect, is it not?"

"I suppose you could look at it that way," replied Winters.

"And then the specialized services of a city! They are a millionfold: My own city is not the latest model, but," she glanced about her with some pride, "I venture to say that not even under the Brain were there so many conveniences to hand in a city. First comes a complete power, food, water and sewage system. The food is all synthetic, of course, and a small reserve supply is stored in the remote event of machinery trouble. Clothes, writing materials, chemicals, and such articles as are consumed from time to time, are provided in continuous supply by tiny factory units. Permanent articles are made quite indestructible. I have no wish that a button will not satisfy! And in addition my city can travel through the air, over the ground or—if I should wish—even over the surface of the water!"

"But how is this possible? You press a botton and —then what?"

"Really! How childish! You understand that from any raw material the automatic chemist produces any desired combination of elements?"

Winters nodded doubtfully. Something of this sort had been developed five thousand years before, but not quite so sweeping in scope, as he remembered.

"Then what could be simpler? The intake feed sucks whatever material is in contact—water, air, earth, no matter—and the buttons control the nature of the finished product."

"And the power?" asked Winters in some confusion of mind.

The woman stared. "Surely atomic motors are ancient enough in the world even for *you!*" she said and there followed a moment's silence.

"I am a historian," she added, half to herself. "I imagined it might be interesting to see you—but I was mistaken."

"But so am I a historian," put in Winters.

She shook her head and smiled. "A historian is of value only as he can translate the past in terms of the present. You are history itself and must be explained by historians—but I am afraid

we have overestimated the mental ability of you ancients! " There was another silence lasting a full minute.

"And what do you do for company—I see you are all alone."

The stranger stared and the dark face flushed darker yet. "Company! Are you sane? That is the greatest boon of all! A person can get off by him or herself and live in peace and comfort without being under the necessity of having other people around! "

"But—don't you like other people? "

"I see that you do not know the rudiments of values in life! In your day you were compelled to go to other people for food, clothing, housing and in fact everything you needed. Nowadays we do not have to do so. In your day you made a fiction of preferring crowded streets. But such a liking is not natural to the human animal and we have cast off that pretence."

"Do you not have husbands and wives? "

"Of course. Such things are for the children. When we become adult we leave childish pleasures and come out into the world."

Winters puzzled over this reply a minute and was startled when the great "city-machine" suddenly lifted itself into the air and started away over the trees. He was still wondering when a great steel cable wrapped itself gently around his body and swung him, struggling, a thousand feet into the air and set him down on a narrow platform at the very top of the structure. A door opened and the metal tentacle gave him a push which sent him sprawling on the floor inside, while the door clanged to, behind him.

It was a few seconds before he recovered sufficiently to stand up and look around him. He was in a steel vault with domed roof. The room was easily forty feet from wall to wall and circular in shape. At the other end of the room a long couch ran for twenty feet beside the wall and beside this, staring wildly at him were three women.

He started to walk toward them when a heavy, snarling voice spoke from the ceiling. "Stay where you are, Winters! "

He looked up and observed at the very apex of the dome a sort of ventilator with a seat slung beneath it. In the seat sat a huge man, broad of girth and with huge shoulders and long arms. He was peering through the observation slits and muttering to himself. Suddenly he reached for a lever and pulled it back with one hand. There was a hiss and a droning hum of some motor starting up beneath Winter's feet. Then Hargry lowered himself, seat and all,

on the end of a cable—for all the world like a spider on a line—and stood peering at Winters with keen eyes. His legs were short and the great hands opened and closed convulsively.

"So you have lived for thousands of years and came to look us over! What do you think of us? The ant comes to criticize the elephants!" and he laughed boomingly.

"I do not understand what it is all about," replied Winters bravely. "I am a scientist. I have come to spend a few days studying your civilization and I find savagery instead. What will you do with me?"

"First, of course, I want to use you for breeding. After that . . . I think I'll take a look at your insides in the name of science. Just now, however, you are a nuisance. I have to be half a world away by tomorrow to attend to some experiments and I don't quite know what to do with you, Winters."

"How do you know my name—that is the second time you have used it!"

"Nothing simpler. Your entire story is part of our racial history. It is written that you went to sleep five thousand years ago and we have been expecting you to awaken for the past month . . . but I have no more time to listen to your childish conversation. We are near the city of the abgene and I shall leave you there with him until I return. That should be safe enough."

2

With a curt nod he pressed a button and was lifted rapidly up to his seat under the dome and Winters felt the platform shake and roll beneath him as the huge structure made its rapid way over the ground. After half an hour the floor ceased its sickening lurching and the steel door flew open. Winters gazed at it fascinatedly and there entered—the cable-like tentacle! With a cry he sprang away, but the steel coil whipped itself around him like lightning and he was drawn out of the door and lowered giddily to the ground far beneath.

He stood on a small slope and before him rose the walls of a city. They were about fifty feet in height and perhaps a quarter of a mile long—silver gray with the sheen of some metal worked into the very stone of the structure. The tentacle had released him, but rested on the ground behind, as though to prevent his escape.

He stood, puzzled what to do, when a huge booming roar came down to him from the skies.

"Enter the city. Winters! "

There seemed no opening, however, and hesitantly he proceeded to walk along the side of the wall in the meadow grass that grew there; and after he had half circumnavigated the walls he came upon a square hewn archway. The metal tentacle, meanwhile, had kept pace with him, slipping over the ground like a huge snake, and now it moved up, forcing him toward the opening. The whole scene was so unutterably lonely and desolate that he shuddered and thought desperately of attempting escape, but finally stepped inside and immediately the door banged to, behind him, nor would it open again. He was a prisoner! With sweat starting on his forehead, Winters walked down the corridor and turned the corner. Then he stopped, breathless. Before him stretched, row on row, thousands of men in orderly lines. Each man was looking straight at him with a smile of welcome. But the startling fact was that Winters could not tell one of them apart—they were absolutely identical in dress and appearance!

He cleared his throat nervously. "Who are you? What city is this? " he asked.

Ten thousand arms thrust out in a gesture and they all answered in unison, like a well-trained chorus. "Our name is Mankind."

This was not precisely illuminating to poor Winters. He walked a step or two forward and fresh vistas of men sprang into view and not until then did he notice something—he was separated from the inhabitants of the city by glass walls. He put his hand out and touched one of them and stared curiously at the figure behind it. There was something slightly unreal about the grotesque affair. Surely those sheets of glass could not be some kind of *mirror?*

"Why are you all alike? " he venutured to ask.

The images in the glassy corridors drew themselves up proudly. Their voices blended into one—a hoarse, heavy crowd-mutter.

"There can be only one Perfect Man. We are replicas of Him. There are no inferiors in our City! "

Then, thought Winters, these *are* mirrors. But, and it struck him with sudden horror, the mirrors did not reflect himself but only the citizens. Was he non-existent—a dream? Dim mysterious corridors stretched in all directions under the clear white light—stretched to insanity. Ten thousand eyes stared coldly

at him; ten thousand lips opened and ten thousand voices spoke:

"In our search for Utopia we sought the one best type. We found it. All other types were suppressed. But there remained then only one man in the country, so these mirrors were invented. They reflect perfectly the shape and voice and even the thought of the Original — but nothing else will they reflect. We could have produced actual men by careful breeding, but what good would have resulted? They should all be identical with the Original, anyway, or else be less than perfect. They would all have looked, thought and acted in the same way. Besides, there would have been a waste of food and labor. So we use the image instead of the reality. If more citizens are needed we will build more mirrors. If there is overpopulation we remove some."

"But — but — is one of you the Original then? Which one is he? "

The mirror-men looked shocked in unison. They spoke all together.

"He is not here. Perhaps He is behind the mirrors. Some of us have claimed to be He — many of us have claimed that from time to time. But we do not believe any such. We know that we are made in His image, but — we do not talk about Him."

Winters walked nervously down a corridor and then stopped again. What could be more fruitless than to go further into such a city? One thing, however, puzzled him.

"How is it," he asked, "that you know my name and speak what must be to you archaic English? "

"Your history, Winters, has been taught in the City of Youth for centuries and Old English, as it was spoken in the days of your own youth, has been a popular study for the past twenty years in preparation for your return."

The answer was in unison, ten thousand words and gestures were uttered in absolutely precise identity. Winters' body had not yet fully recovered from his long coma underground, and his nerves were becoming jumpy.

"I must see the real man," he cried irritably. "The rest of you are phantoms! Let me out of this accursed place! " He waved his arm wildly and turned to retrace his steps. But now it was hard to tell which corridor was glass and which real and he bumped against a transparent wall and rebounded to another. Angrily ten thousand men stepped forward and in an agony of horror

and dread he rushed at random from mirror to mirror battering his body against unyielding glass when he least expected and finding his progress unobstructed just when he extended an exploratory hand. The city reeled about him and he fell to the floor. Everything became dark in his head and he remembered no more.

It must have been an hour later that he awoke and sat up dizzily. The mirage inhabitants had all vanished now and the corridors were dimly lighted, so that it was possible for Winters to determine which was passage and which reflection. He rose to his feet and, feeling hungry, chewed some concentrated food tablets from his pocket, as he wandered down the hallway. Which direction led to the door and which away from it he could not tell. Had he reached the door, he knew that it was locked, but he wandered on in search of it as men will whose position is hopeless and to whom activity offers at least the appearance of accomplishment. Step after step, hour after hour he wandered, turning and twisting among the corridors—now and again trying the glass walls to see if, perhaps, one might prove a door.

In his belt, under the leather tunic, were a few simple tools—a saw, a file and a small axe. In reckless desperation he pulled out the axe and sent it crashing into a great mirror. A cascade of broken glass fell to his feet and he stood gazing into a swiftly narrowing cabinet, which turned downward like the throat of a phonograph horn of his youth; and a hole led through the floor level into blackness. Several stout cables led down from this from three complicated-looking pieces of apparatus that had been set just behind the broken glass. Perhaps, Winters mused, he might climb down to whatever lay below by clinging to these cables. As he stood there, the lights flashed bright once more in the corridor and all around him stood the thousands of reflected figures.

"You have passed beyond the surface of existence," came the massed voice. "You have killed a citizen of our city! " and Winters, not knowing what might follow, entered the shallow cabinet and climbed down the throat of the opening.

It was dark down there and the shaft was a narrow one, but he had scarcely descended a dozen feet before he touched ground beneath and felt himself free of the enclosing walls. A little light came down from above and as his eyes became accustomed to the gloom he perceived that he was in a huge cellar, extending into the murky darkness on all sides and with supporting pillars set

every ten feet or so. Presently he thought he could make out a tiny crack of light far off to one side and set off in that direction, cautiously feeling his way among the pillars. As he got close to the spot there could no longer be any doubt. Light was coming through a crack in the wall! Stealthily he applied his eye to the opening and looked through.

He could make out the far side of a room. The walls were of reddish brown and a chair was set against it and a strip of blue carpet was visible on the floor. As he stood there he heard a voice inside the room speak, and a faint rumble, in unison from overhead, made Winters start violently.

"Come up again, Winters! There is nothing but sorrow to be found behind the scenes of Life! "

Here then lived the Original! Winters was getting ready to withdraw in fear and trembling, when a shadow fell on the wall and into his zone of sight passed a small inoffensive looking man. He paced nervously to and fro, wringing his hands. Winters could hear him mutter to himself: "Oh, he'll find me out! He'll find me out and kill me! What shall I do? "

And Winters laughed silently to himself as the full humor of his discovery came upon him. He spoke softly through the crack and saw the little man start back terror-stricken.

"I mean you no harm. I am a captive here and if you will help me escape I will not touch you. Let me into your room! "

"How do I know you won't hurt me if I do? "

"Why should I hurt you? If you don't let me in I will break the wall." This was pure bluff, for the wall was stonework.

Through the crack he could see the little man standing perplexedly. He made a step toward Winters and then stopped. Winters drew his axe and struck the wall a few noisy blows.

"Stop! Stop! I will let you in! "

Abruptly a square of light appeared in the wall beside him and Winters passed through into the room. The two figures stood for a moment eyeing each other doubtfully. The little man licked his lips nervously.

"So you are Winters! But how terribly different from a man you look. Almost like an . . . *animal!* You have teeth. And your skin is white like the belly of a fish, not like a brown human face at all!" And as if these differences made him somehow superior, he drew himself up proudly and disdainfully.

Winters laughed. Curiously he looked about the room, but except for one end it was in no way unusual. At the far end of the room, however, were set two motors and a maze of wires led into three complex mechanisms set at about eye-level on the wall. The man himself was perhaps five feet in height and quite slight in build. His dark face rose to an enormous intellectual forehead, but the eyes held a weird expression and the mouth was nervously twisted to one side.

"Why do you live here and what purpose do those mirrors serve up above?"

At the question all the stiffness seemed to go out of the man's backbone and he became once more the cringing figure he had been. "I am Hargry's captive! Many years ago he put me here and gave me those mirrors . . . to amuse me, he said. And you, of course, are his captive as well? "

I suppose so," said Winters, "but I don't propose to remain so! "

The dark eyes peered at him quickly. "But if you escaped— where would you go? Hargry would search the world over for you and . . . you would be very sorry for yourself when he caught you."

"You know my history?" Winters asked. The man nodded. "Well, then, if I escaped I should get back to my city and down into my lead-lined chamber far beneath the ground. Hargry would never find me and when I awoke again he would have been dead and buried for thousands of years."

A sudden thought seemed to strike his host like a blow. "But —then so could I!" Sudden hope lit the drawn face. "Escape! It is possible at last— at last!"

He was silent for a moment, then continued. "It would be a simple matter to get out of here, for I solved the problem long ago. I have dug a tunnel under the city wall that needs only a strong push to open through clumps of bushes on the slope outside. But I never dared to use it. . . . Hargry visits me once in a while . . ." He stopped, shuddering.

"Hargry will not return for several days," said Winters.

"Then . . . yes . . . we will do it! " The little man seemed to be nerving himself up to a pitch of enthusiasm. "We must rest ourselves and make all preparations and then . . . ah! . . . out we go and away as fast as we can! "

"Good! What is your name?"

"I am Bengue. Years ago," he drew himself up to his full height, "my name was not unknown in the world as a biologist. I bred men of genius and . . . one of them was Hargry. I was proud of him at first but I had made him ruthless and purposeful and before he was eighteen I had lost all control over him. He went off into the world. You see, Winters, I am not normal, altogether—I like a certain amount of company. To be entirely alone makes me nervous and . . . you have seen me after twelve years of loneliness! I am not always sane . . ."

He stopped and stared broodingly at the floor. "Hargry came back to visit me after a year's absence and we had words . . . he was a true individualist, as is most of the world today, and I am an abgene in that respect. If I had not been the scientist that bred him, he would have destroyed me on the spot—all over a passing difference of opinion during a conversation. As it was, he brought me here and built this city. The mirrors are supposed to make me feel that I have plenty of company!" His voice dropped to a whisper. "*Sometimes I do feel that way about them!*

"I merely ventured to regret the modern tendency to live alone and without any human intercourse . . . I believe I said that an occasional exchange of ideas would benefit everyone concerned." There was a short, bitter laugh. "As I bred Hargry, so is he! Great intelligence, but greater will-power. He took my words as a criticism of his actions . . . and so they were! —But you are hungry, perhaps?"

Bengue went over to the mechanical end of the room and drew from a closed chamber two pieces of whitish food which he and Winters ate. It was almost identical with the "ambrosia" Winters had tasted five thousand years before—that food which the science of the day had pronounced the perfect sustenance for the human animal. It was delicious and the broad couch Bengue offered him proved soft and luxurious. He was asleep in ten seconds.

He awoke many hours later in the grip of a vivid nightmare and sat up, dripping with sweat. Bengue had heard him wake and had turned on a light to see what was the matter. "It will be dawn in another half hour . . . I have not seen dawn now for

many years. Since we are wide awake, we may as well start upon our escape." His eyes were shining with excitement and his cheeks flushed.

Accordingly they filled their pockets with large cakes of the artificial food and Bengue took a small electric torch from a shelf and led the way into the dark cellar full of pillars. They proceeded along the wall for a hundred yards and then the light flashed upon a black hole in the masonry. Into this he led the way and, on hands and knees, the two fugitives traveled a hundred feet of tunnel, Winters in the rear. At last Bengue stopped and made room for Winters beside him.

"Here we are," he said. "Feel these roots overhead? All we have to do is push them up and we are free."

Together they set their backs to the task and after a breathless minute their heads and shoulders emerged together at the top of the short slope leading down to the walls of the Mirror City. It was still dark, but the stars were pale in the sky and over to the East a little hint of yellow gilded a vapory cloud bank. It seemed cool and Winters shivered involuntarily.

"Where now?" he panted, as they struggled up to the surface of the ground.

"The City of the Exodus lies about twenty miles due north of here. We have no means of getting there except by walking."

Winters grunted. It should be possible to make it by nightfall, he thought. They set off across the country, keeping as much as possible under the shelter of the semi-tropical woods. After the first half-hour this semi-jungle became broken irregularly by open glades and in the second glade they came to, rested one of the great living machines. It was just beginning to grow light and the sun's rays touched the very tops of the trees. Cautiously they skirted the opening and plunged on among the low growth of greenery — up hill now. At the end of the second hour they had covered perhaps six miles and paused at the top of a hill to rest a moment. Winters lay flat on his back while Bengue moved nervously about, peering through some branches at the country behind and below them. Suddenly Winters heard his companion utter a sharp exclamation and he sat up to see what was happening.

On the horizon to the south he made out the great skeleton-figure of Hargry striding along outlined against the sky!

It must not be thought that the high-handed action of Hargry

in laying claim to Winters had been taken tamely by the by the biologists and breeders of the world. A dozen or more of them had already visited the ruined City of the Exodus and had seen his grandiloquent notice posted there and the story of the deaths of Meanus and Valendum had been broadcast. Some thirty scientists had climbed into airships of one sort or another and set off to find Hargry and wrest Winters away from him, each for his own ends. Had they been unified in a common purpose, of course, they would have had no difficulty whatsoever. But Stakool, from across the ocean, had run across Pylgrin from the West Coast and, the two being firm enemies, they set upon each other then and there and fought it out. As a result only twenty-eight airships—three of them cumbrous living machines—sighted the great form of Hargry as he strode over the hills.

Even as Winters looked, he saw one of the thousand-foot tentacles strike out at a busy black dot and presently made out the cloud of attackers against the brightening sky. Bengue was all for making instant retreat, but Winters insisted upon remaining.

"Suppose we do get another mile to the north—Hargry can make that up in fifteen steps. I want to see this fight!"

So they remained, Bengue wringing his hands in agony of fear.

The ships seemed to attack one by one and presently Winters, to his amazement, observed three of them circle away *fighting each other!* The spectacle lasted altogether half and hour and Winters' surprise and horror increased every minute of it.

"But why—*why*—don't they get together and all attack at once?"

"Why should they?"

"They want to kill Hargry, do they not?"

"Only so they can get you—each for his own set of experiments, I imagine. Suppose they did kill Hargry—then they would have to kill each other until only one was left. He would search for you and would be the gainer by the fight. There could be only one man victorious."

"How do you know this? Isn't it likely that they want to destroy Hargry for the sake of public peace?"

Bengue's eyes opened wide. "What ancient nonsense is this? Of *course* they could not interfere with Hargry's personal liberty.

Once started, where would such a principle stop? Oh, I see . . . in olden days people used to have things called laws, didn't they? Really, we aren't quite so primitive as that!"

"But why should they want to kill me in their laboratories? I have come here as an observer from the past. I shall go on to the future in the cause of science. What a mad world this is!"

Bengue tapped his foot impatiently. "Where you get the idea that you are qualified to criticise a world so far above you in development, I cannot imagine! Physically you are repulsively bestial—with your teeth and your white skin, covered with hairs like an ape. Mentally—you never would have made it out of my breedings jars! What makes you think your cause is so sacred?"

3

Winters was silent. Bengue's words were plausible, but he suspected a good deal of what he said was due rather to imaginary rather than to acutal improvements in the human-animal during the last twenty thousand years. But there was some truth in them . . . enough to put Winters in a gloomy state of mind. Had he forsaken his own times and his own kind of people all for the sake of finding himself an unwanted guest in a future world of supermen? And if so, why go on still farther into the future? Might the steady progress of evolution not change the face of Earth in the next five thousand years—make him still more ludicrous in the sight of still improved humans who were to come?

Bengue was looking at him surlily.

"All very well," replied Winters. "Suppose you are right . . . I can still reason sanely. If you are all such supermen, then explain what you are trying to do with life."

Bengue shrugged. "I suppose you have some definite questions?"

"What does Hargry propose to accomplish?"

"To breed a more intelligent man than now exists."

"And your chemists?"

"Many things . . . the heavy elements—radium and beyond—have not yet been synthesized in stable form to any real extent, and thousands are working on that point."

"Ah!" exclaimed Winters. "That's more like it! Do they compare notes and help each other in the search?"

"What nonsense is this? Of course no one reveals his work to another! "

"There it is again! Of all the stupid, irrational ways of doing things! "

"But what possible motive could there be for such co-operation? "

"Why, to get the job done and the information broadcast to the world."

"How stupid! A man is entitled to fame and credit for his own discoveries, not for his ancestors'! "

"Well then, have you artists or musicians? "

"Oh yes, such creatures exist I suppose. But I am a scientist and know very little about them."

"In my day we would have called that attitude 'narrow-minded' — but let it pass. It is only in keeping with the rest of things . . . Now answer this question if you can: How does it happen so many super-biologists are willing to drop their so-important work and fight each other for the possession of an ancient like myself? "

Bengue's eyes widened. "You are new blood for their experiments — that's all."

Oh . . . I see. Yes, the biologists *would* be interested in that."

"Well, are there any more childish questions? "

"A thousand! Supposing your scientists succeed in all their tasks and you solve all nature's secrets and breed perfect men — what then? "

Bengue nodded condescendingly. "All our children ask that question, sooner or later. There just isn't any answer. A man is born and reaches adult age. Then for perhaps forty years he is free to do what he can. At the end of his alloted span he must die. The result is, of course, a certain aimlessness — but, after all, when a man is dead that's the end of him. What aim or purpose can there be after death? "

"And so all this fine striving . . .

"Gets us nowhere. For thousands of years we have been working over the problem of prolonging human life. With good luck a man can live to be well over a hundred years of age — but his mental and physical vigor are gone at seventy. Of course there are the astronomers . . . "

"Why, what do they do?"

"Their task is at present to study the planets by telescope and

by actual observation in rocket ships. A small colony has been established on Mars for the past two thousand years and many attempts have been made to colonize Venus—but it is too young a world yet. Poisonous fogs and violent earthquakes are constant and the hot steamy atmosphere is unfriendly to human life."

"But what is the purpose?"

"Earth will not ramain habitable forever. They are preparing for eventualities. Of course what is really needed is a suitable planet circling a new sun—but the nearest probable star is two centuries of rocket travel away and there again our short life-span holds us back. However, our astronomers have a definite aim and purpose in life and, within reason, they exchange information and assist each other."

"And the rest of the world—goes mad," Winters said sadly. "Killing each other for the sake of a moment's whim . . . each pursuing his own ends and, no doubt, rediscovering again and again what has been already found and forgotten a thousand years ago. It is a mad world!"

"But we have—each man—his freedom!"

Winters eyed him quizzically beneath the bushy gray eyebrows and Bengue remembered Hargry in sudden panic.

"We shall separate," he said. "Hargry will pursue us and find us sooner or later. If I can get miles away from you so that he does not suspect that I helped you escape—he *may* not kill me when he finds me!" And without a word of apology he turned and set off at a furious pace westward, crashing through the underbrush as he went.

Winters stood there on the hill-top for ten minutes. He was just turning to make his hopeless way north when he heard, from miles away, a great crashing sound and observed against the clouds the form of Hargry. He was evidently making wreckage of the City of Mirrors. Winters started convulsively and set off through the woods as cautiously as he could. It was difficult to keep sure of his direction traveling entirely by the sun, and he shuddered to think of what might happen to him if he could not find the overgrown ruins for which he was searching. It was hot, and sweat poured off him wetly and his breath came in tortured gasps; but still he pushed on—an ear alert for sounds of pursuit behind him. Twice he came upon clearings occupied by great living-machines and gave them a wide berth, circling round through the woods.

By the middle of the afternoon he was exhausted utterly and sank down to the ground in the shelter of a dense thicket and fell sound asleep. He estimated that he had come fifteen miles since dawn.

He awoke in the middle of the night, chilled and with every muscle aching. He forced himself to eat the food he had brought and drank from a flask. The sky was clear and the stars shone brightly. Polaris, friend of mariners, beckoned him north as of old, but he remembered that even the stars had changed and aimed his course partway between the ancient North Star and one of the bright points in the handle of the Great Dipper. It was bad enough walking by day, but at night he found himself unable to better a pace of a mile an hour and when he came to clearings, walked in them, close to the side of theforest.

Hour after hour passed and, trying to recollect the lay of the country around the ruined city, he began to fear he had lost his way. So he stopped and waited for daylight. At the first light he started forward again and so came, weary and worn, to the crest of a sharp ridge, clothed with green. On his left, across a broad clearing, was the white masonry and dusty purloins of his goal!

Thankfully he was about to start toward it, when something gave him pause. It was music! It came from the other side of the ridge. Cautiously he crept through the woods and peered out to see one of the living machines a few hundred feet from him. The music had ceased now and by the early light he made out a dark figure seated in it busily working over some papers. Curiously he waited and presently the figure straightened up and pulled something with one hand. Winters always remembered that scene, not only because of its tragic aftermath, but for the sheer breathtaking wonder of sound that ensued.

The sun was just lifting above the eastern horizon and a few brilliant clouds floated above it like gorgeous galleons sailing in the ocean of sky. The heavy dark leaves of the palms that edged the clearing were motionless and the hills behind them showed faint and blue. The sound seemed to to come from the hills at first—a faint far piping that was answered again nearer by. Then abruptly a triple crash of sonorous chords out of which a deep golden voice began to sob melodiously.

The song swelled in tone and developed its simple phrase into a theme of such tragic melancholy that a hundred small voices commenced piping as if in sympathy. Then once more the great

stunning crash three times repeated and now with new and sinister meaning the harmony changed as deep basses lent new force to the old theme. Abruptly the music ceased — unfinished. There was a moment of silence broken by a voice.

"You like it?"

"Heavenly!" The answer was in a woman's voice. "Dulcgong has never done anything as good, Varlin. But Varlin . . . music is not the only pleasure! Look at me!"

Winters strained his eyes to see the speakers, and finally made out another form in the machine, half hidden behind the musician.

"No, don't pretend you are not interested! You are looking at Aphrila — the most beautiful woman in the world. Why do you turn away your head? Are my cheeks wrinkled or my hands hard to hold? Many men would give their lives to be in your position! Hargry came out of his fighting-tower when I visited him last and used my circling arms for his protection during a whole mad week!"

"Don't, Aphrila! You are very beautiful — but I want to work on my music. I can't think properly when you are acting this way."

"Oh! I bother you? I at least make some impression — I distract you from your work! Music is beautiful, Varlin — but have you ever eaten food prepared by Escule? Do you know what it is to drink the liquors invented by Vint or by that great artist Grumbaugh? Come with me and I will give you all these and more! You will come back from such an experience with renewed youth and vigor and will write music greater than you have ever dreamed!"

Their voices became inaudible and Winters retreated cautiously, wondering more than ever about this mad world into which he had arisen. He crossed the narrow ridge under the trees and looked out at the great figure of Hargry striding toward him from the west! And now, like a panic-stricken animal, he scuttled back through the woods and stopped at the other side, heart beating like a trip-hammer and limbs trembling with fear and exhaustion. Presently he could hear the great thudding footsteps approaching and down from the left strode Hargry, to stop suddenly as he caught sight of the living machine.

Then the great structure advanced and the clumsy living-machine tried to rise and escape, but a tentacle whipped out and held it

motionless, then lifted it slowly halfway up to Hargry's steel chamber at the top.

"Why, it's Hargry! Is this any way to treat Aphrila?"

There was a short silence, and then Hargry's voice boomed out in laughter. "And who is Aphrila's friend?"

"You *were* not long ago, Hargry!"

"I have no time for memories, woman! Who is he? . . ."

As if in answer, a great chord of music sounded—so deep and rich as to set the air trembling and the leaves rustling on the trees. For a startled instant Winters thought the sky turned brown and felt his limbs tremble. The sound ceased and he looked to see the tentacle set the machine and its occupants down again, none too gently, and the tripodal monster set off again northward and out of sight.

Evidently Aphrila and her muscian were badly shaken, for it was five minutes before the clumsy machine rose into the air and soared off in panic-stricken flight to the south.

Winters tried to imagine the part of the story left unrevealed and found it hard to picture the life and activity of the human race from the fragments he had been privileged to observe. The first woman he had talked to spoke of sex matters as things for children. Yet here was a woman who evidently devoted her life to the art of love-making—and Hargry, an earnest, almost fanatical, biologist, had been willing to amuse himself with her.

What a jumble of interests—all conflicting—did this world present! Each person followed his particular whim or desire to its ultimate end with a fine disregard for the interests—even the lives—of all others whatsoever. And yet in the midst of this anarchy there seemed to be some orderly progress in this line of research and that. Could it be that anarchy was desirable thing? Winters, thinking back over the past twenty thousand years of human history, decided not. What had happened, he felt, was a cycle in government. There had been far too much under the Brain; now the pendulum had swung the other way, and there was far too little. Somewhere between the two extremes lay the truth and after a few more thousands of years it would be found there and recognized.

But his own immediate problem was still unsolved. This world was not for him and he must get back to his subterranean chamber and await a better one. Yet how could he cross a half mile of

dusty plain to the white ruins that showed against the green forest to the north? Far to the left the great form of Hargry's fighting machine showed, like the naked tower of some twentieth-century suspension bridge. Winters lay in the concealment of the shrubbery and waited impatiently. Hours passed and Hargry still strode about the landscape. It began to look as though he intended to remain until he had found Winter! *And yet*, thought Winters, *when night falls surely I can slip down to the plain and across it unseen!*

He was growing hungry and had no food left and nothing with which to slake his mounting thirst. At dusk he carefully observed his directions and so soon as darkness set in he slipped down the hill and started across the level. He had gone halfway before the searchlight started to play over the plain. The first stab of light coming from Hargry's thousand-foot tower startled Winters almost out of his senses. Should he retreat or keep on? But there was no real choice—he *had* to reach the ruins.

He stumbled forward at a run and the chill of fear gave his limbs surprising new strength. Hargry was approaching now, and the light swept the ground behind him in a long swath. On ran Winters, hoping desperately against hope. Then the light became steadily fixed upon the plain close to the ridge he had just left and Winters had a two minute period of grace. He could see the first of ruined walls just ahead of him now. But the searchlight was coming slowly toward him, as though Hargry were following something—as he was, for through his telescope he studied the tracks Winters made as readily as though he were stooping over them in person. Just as Winters reached the ruins the light caught up with him and he could not resist a terrified glance over his shoulder at the great white eye that glared balefully out of the darkness and that grew larger each second as Hargry's great strides bore him nearer.

With a cry Winters darted up a side street, into the friendly darkness. He knew where he was—he had to reach the other side of the central square. The distance was perhaps two hundred yards. Should he make straight for it? Or should he attempt to hide and slip stealthily—a short dash at a time—as opportunity might serve? When he came to the first cross street he stopped, for the light lay blindingly upon it. If he crossed he would guide his pursuer toward his ultimate hiding place, and

And now began a grim game of hide and-seek. Hargry was evidently determined to smash the entire city to the ground and thus destroy all hiding places.

Winters realized that he had not only to reach safety but to do so unseen, or he would be dug out and made captive again.

He slipped into the house on the corner. The door was non-existent and little more than one room remained intact of the original structure. At the window on the cross street he waited breathlessly. If the light moved away for two minutes he could cross unseen and . . . there! It had gone! Like a flash he climbed over the windowsill and darted across and into the house on the other side. Then the light swept by once more—almost overhead now—and a great crash told of Hargry's huge feet trampling the buildings to the ground.

And now began a grim game of hide-and-seek. Hargry was evidently determined to smash the entire city to the ground and thus destroy all hiding-places. Winters thought a breathless moment and then slipped out from the rear of the house and made his way unseen to the great circular avenue that surrounded the ancient city. If he could only do it in time! He was protected from the searchlight, provided he hugged the buildings, and ran panting along until he came to the section of the city in which Eric's house had stood.

The dust of fallen masonry was rising like a white cloud now and it was this that really enabled him to make his final dash along a lane and past the very foot of Hargry into the doorway he remembered. As he did so a great crash arose outside and the front of the house fell out. But Winters was in the back room by now and pressing his foot on the release mechanism, which seemed to take an eternity to operate—though actually three seconds only elapsed before the heavy stone flag arose and he could plunge down into the darkness of the stairs.

He frantically pulled the lever and breathed a sigh of relief as the stone started to sink over the entrance. But Hargry placed a foot upon the building at that time and with a crash it sank beneath the ponderous weight and sealed the trembling fugitive beneath a layer of wreckage.

For an hour Hargry tramped furiously over the ruins until no stone was left standing upon another in all that city. Then, as if he realized the hopelessness of the task, the light flicked out and the great structure commenced striding southward; the sonorous booming of the great feet grew fainter and fainter in the distance until the stars looked down upon the quiet night and

the dust settled in a white layer upon everything and gave it a ghostly look.

Beneath the city, lights shone in a small chamber. Winters had been hurt by a falling stone and spent half an hour dressing his bruised leg. Then he took food and medicine and slept fitfully for a few hours before he made the final preparations for his long hibernation. He closed the great metal door, set the radium clock to arouse him after five thousand years should have passed, inspected and adjusted the tiny atomic motor that would keep the chamber warm and provide power for the lights that were to awaken him and took his drug.

Then in the half hour of consciousness yet remaining to him, Winters opened a heavy book, with leaves of sheet gold. In this he made the following fragmentary entries of facts gleaned chiefly from Bengue.

15,100 A.D.—Perfection of exogenesis. Human embryos successfully developed in test tubes. From here dates the dropping of the last link between mankind and the animal emotions.

17,500 A.D.—Test colony set up on Mars. Still maintained.

18,000 A.D.—Perfection of materials machine—any chemical substances produced at will from any given raw material.

From this period commences roughly a general tendency toward the gratification of the individual will or ambition regardless of consequences. Tendency still dominant. History ceases to have significance to the race—a mere record of individual actions and achievements.

20,000 A.D.—Winter's fourth awakening.

Winters read the words over carefully and sighed at their brevity and the extreme paucity of information available to him. But it was the best he could do; he closed the book and set it carefully away before he stretched himself out on the couch, adjusted the stimulant tube over his mouth, and plunged the chamber into darkness.

And while he slept, to wind up all the threads of this necessarily rambling narrative, a slight and fearful Bengue was gazing hung-

rily from the shelter of the forest upon the breeding establishment of the late Meanus. For a day and a night he had been watching it; finally, taking bravery from desperation, he marched boldly up and found it a very biologist's paradise of equipment. Young Bork and Farinda rather hesitantly handed over control to the edlerly stranger and Bengue spent a whole hour without once thinking of Hargry.

Then he remembered and rushed fearfully out-of-doors and stood a minute listening, but heard no sound. He shrewdly suspected that Meanus might have been one of Hargry's recent victims in the late unpleasantness and after a week or so two came to look upon the place as his own. But he never got over the feeling that his present freedom was a temporary thing—to be ended whenever Hargry should sound on the horizon. Meanwhile Bengue bred humans and enjoyed himself hugely.

Years later the suspense of waiting Hargry's arrival became unendurable and he began venturing upon short scouting trips in an airship, but did not happen to come upon his former pupil. Bork, moreover, was becoming difficult to control and Bengue decided upon a curious course of action. In the back of his head had stuck firmly the words of Winters, uttered long ago: "When I awake, Hargry will have been dead for thousands of years! " So one day he called Bork to him and made him a present of the establishment, leaving at once in his airship.

He flew to a secluded valley and set his atomic motor to digging a tunnel and preparing a lead-lined chamber. In the course of a few days airship and man had disappeared and were never seen again. Thus it came about that two sleepers waited the passing of centuries until the appointed hour should release them; and on the swarthy face of Bengue rested a smile of peace and security such as he had not experienced in many weary years. There was a hint of triumph in it, too.

More Than One Way

by BURT K. FILER

When there's no other way out of a spot—evolve!

"YOU CAN'T compete with us," hissed the Denebolan. "You're not good enough." I slammed "OFF THE AIR" and ran a biokaleidoscope to soft music. One more interview like this and the censors would have our heads.

"Why do you do it?" I asked Mel later, in the bar, while striving to replace the sweat he'd caused me. "Everyone knows these flying snakes have us by the short hairs, but nobody's supposed to say it. There'll be half a billion affronted letters to Congress."

"Oh, shut up and have another beer. You know damn well how I feel: Until we face our inferiority we'll never do anything about it. People have got to admit we're trapped here in a fraction of the galaxy. The Denebolans aren't so sharp that they can hog what's left of space; hell, Scotty, some of it belongs to us. But we're huddled in our corner like scared spaniels, cowed but not mad. Okay, so we don't have psikinetic mentalities, I'm going to get every man on Earth mad enough to swallow his fear and do something. Now your machine . . . "

Ah, there he went again. Big

Mel Serakis, the demigod of every hollow-eyed college kid in the world. Usually hollow-eyed because of the show itself, since we aired from one to three each morning. But even late hour shows like ours can't interview a supercilious Denebolan and get away with it. "Damaging to the public ego" was the phrase, and we'd be up to forty-seven censor's marks in February of a year allowing fifty.

As usual. Why in hell did I stay with Serakis year after year, congressional committee investigation after investigation? Why didn't I tell him to get another engineer-bodyguard-friend? Because I believed in him, that's why.

"Scotty, you've got to finish that machine right away," he burst out. "People need an example of what could be. We'd be psikinetics ourselves and squash the snakes at their own game; we'd . . . "

"Ease off, ease off. When you make us enough cash to get the parts I'll build the thing; but you keep risking both our necks and incomes with your damn Messiah complex. Just get us thrown off the air and bang, no dough and no machine."

"True. Okay, I won't rub people's noses in the Denebolan's superiority any more. And I'll get us the money."

"How?"

"Plugs. I'll plug a few products informally and . . . "

"C'mon, Mel, you're above that and you know it."

"Not so. Watch me tomorrow. It's for a good cause."

"Marx said that."

"Damn it all, let me worry about my conscience, will you? How many credits do we need?"

"Seventy thousand. Lot of plugs, eh?" He whistled an indecent tune in answer, and left.

HE WAS lousy at it. I cringed in the control room as he filled my earphones with phony casualness. "Over at Arturo's the other night . . . " or "Oops! Oh well, won't hurt my Glenweave suit . . . " and so on. Mel was basically too honest to try the shady business of plugging for hip greenery. His regular sponsors threw him off the air after two weeks, but we had nearly enough money.

Mel moved out to Orient Point with me after the ax fell. My wife liked him—few women didn't—and the kids thought he was superman. EDM was out in the barn where it belonged, and where Mel and I spent our every waking hour. Mel has many things—looks, character and brains—but he's the world's worst mechanic's helper. After he'd melted my torch for the fourth time I suggested he leave it to me.

"Sorry," he mumbled. "Keep getting those POWER and VOLT-

AGE buttons mixed up." But he stopped work to pore over our notes, much to my relief.

EDMs (encephalodigital manipulators) are mental input/mechanical output divices. You jammed on a helmetful of pins and stared into a cageful of fabricating equipment surrounding a stage. Whatever mechanical device you thought of was fabricated on that stage. The better ones even filled in the details of your gross schemes. The things had seen industrial use for a decade. My particular EDM—my pet, my joy—was different; it wasn't mechanical, but biological. Or it would be biological if I ever got it built.

It had taken Mel to realize the potential in the thing. One day about a year ago he'd asked what I was doing with my spare time. Having just finished my first tiny prototype, I demonstrated with a cockroach. Sedating the little beastie, I tossed him on the stage and donned the helmet. He disintegrated, then reorganized into what I thought a better cockroach would be; sort of streamlined and capable of sustained flight.

THE MINUTE my new roach formed, he died. Such was usually the case.

"Why?" asked Mel, staring at the twitching little corpse.

"Because I was wrong. Such a roach apparently couldn't have evolved. He was born into an environment that couldn't have created him, and so died. But I'll try again."

This time I thought of a standard cockroach, except that it was as big as a frog. This one hopped off the stage, grabbed my coffee cup, and, without spilling a drop, disappeared down a rathole in the barn floor.

"Now that kind of roach could have happened. It's just that natural selection never moved his kind in that direction."

"Hmm," said Mel, tugging thoughtfully on his long Greek nose. "Then it's an 'if' machine. If whatever you dream up could have been, it lives."

"Sort of," I answered. "Only the matrix of evolution is 103 by 103 and changes with time. Alternate evolutions to the one we exist in are tough to find, particularly for more complex animals. Now . . ."

"Spare me," he said, and held up his hands the way he usually does when I bore him. He tugged away at his nose and didn't talk for three days. That was a year ago.

Now our idea was people. Just exactly what would the human race have become if someone had stacked the deck of blind chance in its favor? Could we compete with Denebolans?

THE DAY CAME: A silvery winter morning awoke to the buzz of a thousand amps whanging into a tenthbillion's worth of gadgetry. The barn reeked of ozone and burning insulation, chemicals to add to our creations where needed, and people. Mel and I had worked straight through the night, not eating, not leaving.

"What first?" I asked.

"Chicken. Here we go!" and he tossed the nonplussed fowl onto the stage.

A "smart" chicken died.

A "fast-flying" chicken died.

A "prolific" chicken—three eggs in five minutes; fat and brainless but oh could it reproduce—survived.

"Ugh," I grunted. "I hope humankind has better possibilities than that."

"We'll see," said Mel, and without further preamble hit me over the head.

I awoke tied to a chair on the stage. Mel was fumbling with the controls and staring down at his scrawled notes. He raised his eyes to mine, beseeching forgiveness, I thought.

"Scotty, I'm . . . "

"Sorry?" I put in.

"No, confused. How do I administer the sedative to you?"

I should have known! That egomaniac figured himself as painter and me as painted from the start. Trouble was, I inwardly agreed with him, and I told him what to do.

Wham! I was seven feet tall. I died.

Six feet tall and beautiful? No, I died again.

Five feet tall, but with a macrocephalic forehead? Un-unh.

A normal five-ten but hairless, muscular, and three-toed? Close. I remained alive long enough to curse Mel Serakis in a tongue neither of us had ever heard.

There was a long black spot. Mel mishandled the machinery and it quit on him; how in hell he ever fixed it surprises me even today.

All of a sudden I was me again. I stared through the machinery at Mel's oddly distorted face. It smiled, emitted a whoop and exclaimed,

"Did it! I did it!"

"Did what, you moron," I tossed at him. I reached behind me, felt the knots and untied myself instantly. Oddly, my hands weren't involved. "I ought to break your neck, using me for a childish experiment like this. Why . . . "

"Think, for heaven's sake, Scotty, think. That's all I ask." I obviously scared him as I wafted my way through the room toward his console. Think? About what? About . . . whoops. The six inches between my shoesoles and the floor wasn't much of a fall, but I stumbled anyway.

"Mel," I gasped. "I've got two memories." Suddenly he was fat and handsome again. The impression lasted a few seconds before he melted back into his ugly cast.

"Right," he answered. "You've got your own memory, plus that of a man who'd arrived at the same state of evolution by a different path. I figured . . . "

"Never mind," I said, and held up my hands in the manner I usually did when he bored me. Of course, I'd look the same in any evolution. A creature as complex as a man would have no choice, unlike simpler animals that don't use every single card in the evolutionary deck. But how we got to be where we are is a different story. A more propitious path of evolution would . . .

Would make me bored with Mel's puerile explanations . . .

Would made me flabbergasted by Mel's astute observations?

"Damn," I said. "Mel, you only did half the job. I'm plain old Scotty Felder one minute and hyperintelligent, telekinetic Scotty Felder the next. You messed up the machinery as usual."

"Never mind," he said as he led me back to the house and my worrying wife. "Half a hyper-Earthman in hand is worth six Denebolans in the bush, or something like that. Besides, we'll run you through again tomorrow."

I could do just about anything. For a couple of weeks I read the Wall Street Journal. In a couple more, Mel and I owned our old 3V station. Suddenly all the hollow-eyed college kids had their hero back, and Mel broadcast on prime time too. He showed admirable restraint as we waited for the perfect opportunity; it came.

THE DENEBOLAN coiled easily in his chair, one wing hooked casually over its back. His narrow reptilian face dripped scorn at Mel Serakis, seated between us. It was the second Sunday in January, 2071, and Mel had broken right into the Unibowl; we had forty billion angry viewers wondering where in hell the ball game had gone.

"Mr. Zekwgn, to what do you attribute the superiority of your race to our own?" was Mel's opening question.

"Brains, stupid."

"I see. Do you feel that any Denebolan is brighter than any human?"

"Certainly."

"How about Mr. Felder here. Scotty, what's gravity?"

"Gravity ain't here just now." and I exercised enough psikinesis to lift myself off the chair.

"Fraud," hissed Zekwgn.

I lifted him off his chair. He kept on shouting. "What's the third root of the set of non-impressional digits beginning with . . . "

"Zero," I answered calmly. "I also read stupid minds."

Forty billion Earthmen saw their first embarrassed Denebolan that day. They forgot the Unibowl, where bigger Earthmen simply embarrassed smaller ones. Of course they wanted to know how I did it; every phone in the station rang continuously as I was tying the protesting Denebolan's body into knots. Mel let them ring and began his pitch.

"Wake up, Earthmen. We can move into space, we can compete with these flying snakes." The way Mel pronounced "snakes" would curl the hair on a light bulb. "We must take a new heritage, admit ourselves to a new evolution. Mr. Felder here has a machine which he's just turned over to the government. (That startled me.) It will change each and every one of you into . . . "

"War!" screamed the hysterical Denebolan. He meant it.

We won.

The Reckoning

A few of you didn't care much for the Williamson novelet, but it was the first to take lead position and was in and out of it several times. No one disliked the West novelet, and it held the lead, too, for a while; but a little beyond the halfway mark, what would be the winner regained the lead and held it right up to the end. And here is how it all come out.

(1) *The City of Sleep*, Laurence Manning; (2) *The Pygmy Planet*, Jack Williamson; (3) *Plane People*, Wallace West; (4) *Destroyers*, Greg D. Bear; (5) *Echo*, William F. Temple.

About one third did not specify either "yes" or "no" on whether they liked the cover; with the other two thirds, Paul's drawing was just about evenly split between the likers and the dislikers.

Bound To Be Read

THE PLANET OF THE DOUBLE SUN
THE SUNLESS WORLD
SPACE WAR
by Neil R. Jones

Ace Books, Inc., 1120 Avenue of the Americas, New York, N.Y. 10036; 40c, 50c, and 50c respectively; all 1987.

So long as no pretense is made that these are *great* stories, but at best enjoyable narratives in the old fashioned style of science fiction, fairly good on imagination, but hardly strong on character, etc., then I do not hesitate to call them pleasant reading when you want to give your brain a rest. And there's an idea here and there, too, for speculation of a placid sort.

The Planet of the Double Sun (123pp) contains *The Jameson Satellite (AMAZING STORIES,* July 1931), the title story *(AS,* February 1932, with a lovely cover illustration by Morey), and *The Return of the Tripeds, AS,* May 1932, with a very good cover by Morey). In the first tale, we read of one Professor Jameson, who had a horror of the physical dissolution which would follow his death, so arranged to have his mortal remains sealed into a spaceship which would become a permanent satellite of Earth, and where the conditions of space would preserve his body indefinitely. 40,000,000 years later, a spaceship manned by the machine-men of Zor (the Zoromes, as they are called, were once humanoids with physical bodies not too dissimilar to ours, who solved the problem of mortality by having their brains transferred to efficient metal bodies controllable by thought) enters our solar system. The Zoromes find the Jameson Satellite, revive the Professor and recruit him to their ranks of immortal and ageless machine men. The rest of this story, and of the entire series are adventures of Jameson (now and hereafter known as 21MM392—the Zoromes have only numbers, no names) here and there in the cosmos.

The Sunless World (189pp) contains *Into the Hydrosphere (AMAZING STORIES,* October 1933) *Time's Mausoleum (AS,* December 1933, with a good cover illustration by Morey), and the title story *(AS,* December 1934).

Space War (158pp) contains *Zora of the Zoromes (AMAZING STORIES,* March 1935), the title story *(AS,* July 1935), and *Labyrinth (AS,* April 1936, with a beautiful cover illustration by Morey).

We thus have the first nine tales in the series, and Donald A. Wollheim, Ace editor, tells me that the series will be continued. This is a good thing, as the tales are pleasant reading and quite unpretentious.

For what they are: recommended.
RAWL

THE INVULNERABLE SCOURGE

by JOHN SCOTT CAMPBELL

The warnings had gone unheeded, and now the entomologist had only one suggestion as to what to do about the plague: strychnine in coffee. No . . . don't spray it; drink it!

DR. PETER RIIS made his living from bugs, generally, and harmful, poisonous bugs, particularly. All day he taught Insectology in his corner of the College, and most of his spare time was spent in reading or writing highly technical papers on *Ichneumonidae, Ephemeridae* and kindred topics. That Entomology paid—at least to one as devoted as Dr. Riis—was proven by the fact that he did not have to rely at all upon his meager salary as the Head of the Department of Biology, drawing considerable sums from a highly successful method of combatting the Corn-borer.

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The year 1930 (as the cover dates on the magazines go), saw the emergence of two Campbells, quite unrelated to each other. The January issue of *AMAZING STORIES* ran a wonderful cover by H. W. Wesso, illustrating John W. Campbell, Jr.'s debut: *When The Atoms Failed;* the May issue of *SCIENCE WONDER STORIES* presented *The Infinite Brain,* by John Scott Campbell. While the first Campbell made a lasting place for himself in science fiction, first as a super-science author in the E. E. Smith tradition; then as a writer of very poetic science-fantasy speculations (under the name of Don A. Stuart), and finally as the third and greatest editor of *ASTOUNDING STORIES* (which he immediately re-titled *ASTOUNDING SCIENCE FICTION,* and later re-titled *ANALOG*—Science Fiction, Science Fact), our present Mr. Campbell had only a few appearances. But they all made good reading, and the item at hand was the first "Insect menace" tale in the magazine which did not deal with giant insects, as terrifying as impossible. It seemed plausible in 1930 and it still sounds at least possible today.

His method was simply: by cross-breeding several species of insects and subjecting each generation to certain conditions, he had evolved at the end of two years a parasite upon the Corn-borer; a minute creature tracing its ancestry vaguely to *Chalcididae.* The eggs of this creature, dusted over infected fields from an airplane, soon gave the unfortunate borer a disease which was as contagious as deadly and resulted in the complete extinction of the pest.

Dr. Riis' interests, however, were not confined to academic or practical applications of his knowledge. He experimented constantly for his own amusement and results were often grotesque; such as his cricket, whose kitten cries kept the Woman's Hall awake half the night: or the huge beetle with luminous eyes. But these, however, are different stories.

The events which really led up to that with which this narrative is concerned, took place near the end of the Spring quarter in 1930. Dr. Riis and Prof. Herman Ludwig Pfeffler, of the Department of Physiology, were preparing their final exam papers together. An important question in Prof. Pfeffler's Questionnaire had given them pause, and that great savant was explaining his stand. "Das question, Doktor Riis, iss nod staded dot vay. Id said Oxblain ten reasons vy man iss bedder suited for der Survival of de Fittest dan any odder. genus'. Now vot iss wrong mid dot?"

"Everything," answered the

other, with gusto. "If man was better equipped by nature than any other genus he would have won that struggle."

"Vell," said Prof. Pfeffler, with a sweeping genture, "id iss gut of you to tell me dot. Und how long, may I aks, haf ve been under der iron appendages of our conquerors?"

"Ever since we emerged as a race," replied the Chair of Biology in a tone of conviction.

Prof. Pfeffler was exasperated. He gesticulated, to add emphasis. "Always you make dos imbossible statements! Mein Gott! Vy can't you be serious vunce?"

"I am now."

"Den go und brove id! Go down to der jungles uf South America or some place und get me a specimen uf our superiors in this world. Take all summer, if you vant, but show me vun!"

"Why wait so long?" replied the other. "Here"—he made a sudden motion with his hand—"is one of our conquerors." He held a fly under Professor Pfeffler's nose. That person regarded it with disgust.

"*Mein Gott!*" he arose to his feet gathering an armload of papers. "Diss iss too much. *Guten Tag, mein Herr* Riis!"

He started out wrathfully, when Dr. Riis stopped him.

"Now don't go off like that, my dear Herman. Remember I still have two questions I want your opinion on."

Prof. Pfeffler turned about in his tracks.

"Mein opinion," he snorted. "Of vat use iss mein opinion to a great, super-cerebral, scientific mutation like you?"

"Now Herman, be calm, you haven't given me a chance to prove what I said."

"Profe id?" Prof. Pfeffler glared at his colleague. "Profe dot de fly iss de conqueror of mankind? If so vy did he nod flatten you oud for disturbing his peace?"

"O, the fly isn't—that. I meant it only paradoxically. He represents that most numerous class of animals, the insecta."

"O! He does, does he? Und den . . . ".

"Precisely, my dear Prof. Pfeffler. The insects are the real masters of the world. Consider that most humble creature, the cockroach. His remote ancestors, almost exactly like those of today, wandered before the first Dinosaur shook the soil of a Jurassic swamp. He scrambled between the toes of the Mastodon, he invaded the caves of the first Men, and today, my dear Professor, if I am not mistaken, you asked my assistant for some of my insect powders to combat cockroaches in Mrs. Pfeffler's most excellent kitchen."

"Und vot" said the other, "has

dot to do mit vot you shust said?"

"That is just an example. Again may I ask you to consider the Ant. That . . . ?"

"Vell, if dey are so strong vy don't dey rise opp und exderminate us? I should tink dose great strong creadures would lose batience mit beoble like you who are so undignified as to grab a fly by the legs mitout asking his bermission."

"THEY DON'T exterminate us," answered Dr. Riis, "because they don't need to. If mankind were to encroach too much upon their domain he would be utterly defeated. Science prides itself upon winning battles with the insect kingdom. They can hardly be called battles since the enemy never attacks man, but merely begins to colonize new territiory. When the insects really come in force, mankind just has to duck and pray."

"Und to vat do you refer?"

"Well, locusts for one thing. What did the ancient Egyptians do when they came along? They locked up their windows and laid sacrifices to Isis and Ra. And what does the modern science do when a plague comes? The same thing, my dear Prof. Pfeffler. And if anything is left of their crops they thank Heaven."

"Vell?"

"The only thing that holds the insect kingdom in check is Nature. Her perfect balance is always maintained, in spite of a little locust plague once in a while. In the preservation of this balance lies the existence of all life on the planet. It is like one of the balanced aquariums your students have been making. Every living thing puts back into the earth that which it takes out, and there something else takes the food material and converts it into another form, which can be used by a different creature. This cycle is necessary for the continuance of life. Each species is necessary for the existence of every other. Without the plants, the animals would starve. Without the insects, most birds would die and many flower-bearing plants would be exterminated for lack of pollenization. Without birds to distribute their seeds, many plants would be confined to a small area of Earth's surface, where they would eventually die.

"In short, the lack of any one of the major *orders* would seriously upset the natural cycle and possibly result in a depletion of life on Earth. Similarly, a sudden increase in the numbers of any *order* would have just as disastrous an effect. Too many animals would soon eat up all the plants, and then each other, until finally the survivors would starve. Too many plants would literally crowd the

animals into the sea, for in dense jungles, such as are found near the Equator, the majority of animals cannot live. While in the bamboo brakes only snakes and birds can exist.

"Fortunately, however, the balance is kept. Each species has its enemies which keeps its ranks thinned. In general man cannot disturb this balance; though there have been such cases. Slaughter of coyotes in Eastern Colorado resulted in a plague of rabbits, which multiplied amazingly once their natural enemies were removed. Rabbits, fortunately, are not a very prolific species as some go. Do you know, my dear Pfeffler, how many descendents one oyster would have at the end of four generations if every embryo lived."

"Vell, I nefer boddered meinself mit such . . ."

"That single oyster would be the ancestor of 66,000,000,000,000,000,000,000,000,000,000 more—and their shells would weigh eight times as much as Earth! Of course they never could do it, for lack of lime— but that is only an example of what some kinds of animals could do if all their natural enemies were removed."

"Ja" responded Prof. Pfeffler, undaunted. "If dey could be removed—but dey can't *mein guter Herr Doktor.* So fortunately for der world, you can go on und theorize all you vant to. In der meantime I haf to finish dese examination babers."

"If they could be removed," repeated Dr. Riis, more to himself than to his companion. He thought for a moment and then said— "And my dear Pfeffler, what if I told you they could?"

For the second time Prof. Pfeffler rose. "If dey could," said he, with determination, "vich dey can't, I vould go right home und trow away der insect powder und start a boarding house for cockroaches. Gut tay."

After he had gone Dr. Riis stared out of the window for some time before resuming work on his papers. When he did so it was with a glint of a smile as he murmured to himself, "Well, maybe I won't take that vacation after all. It would be good to prove old Pfeffler wrong."

IT WAS SPRING again. Sitting by his big study window where he could see the landscape, Dr. Riis was writing up his examination papers. His study was considerably changed. Up near the window was a large screened box and there were numbers of glass and netting enclosed cages on the table. From them rose intermittently a buzzing. Now and then Dr. Riis paused to glance toward

the big cage and as he did so, he would smile slightly, as if thinking of something highly amusing.

Suddenly there came a knock at the door. In answer to Dr. Riis' "Come in", there entered a portly gentleman with glasses and portfolio, whom the Chair of Biology recognized as Prof. H. Ludwig Pfeffler.

"Delighted to see you, my dear Professor," cried Dr. Riis, cordially. "Sit down. And is it the examination papers again?"

"Id iss," responded Prof. Pfeffler, slapping his brief case upon the table. "Such a lot of *Dummkopfs* vot iss trying to learn Physiology. I esk vun girl 'Give your reasons for believing in der theory of evolution?' Und she said 'Because you said it vas zo.'— Ah! vot iss in dose boxes?" Pointing towards the window.

"Bugs," replied Dr. Riis dryly, repressing a smile. "In the large box there are some larvae which I expect to metamorphose in a week or so. Sort of a new type; nothing radical in appearance, you know."

"Vell, said Prof. Pfeffler, "call me oop ven dey come oudt. I vuld like to zee dem."

"I will," replied Dr. Riis, "Well now, about these examinations. I am going to base my questions this year principally upon the organic chemistry involved in animal life. Question one reads

2

ANOTHER SPRING DAY with birds singing and butterflies already flitting about the garden. Dr. Riis stood beside his cage, watching its contents intently. There came a knock, and a moment later Prof. Pfeffler entered.

"*Guten Morgen, Herr Doktor.* Zee vat I caught on der Campus joost now."

Carefully opening his cupped hand he displayed to his friend a gorgeous butterfly.

"A *Phiclides Ajax*—so rare here."

"Wonderful!" said Dr. Riis." "How fortunate for you to catch him."

"Ja," admitted Prof. Pfeffler. "Almost did I break mein neck, chasing him. Und mit only mein hat to catch him. I schvear I vil neffer go oudt again mitout a net."

At that moment the attention of both Professors was riveted upon one of the cages. The larvae were beginning to open. For some moments they watched in breathless interest, making now and then a highly technical comment as the various anatomical parts appeared. At last an entire insect was before them, slowly extending and contracting its still damp wings.

"A Coleoptera*—uf der species

"

*Scientific name for the order including beetles.

"Of the species—*Rex Orbis Terrarum,*" said Dr. Riis, after a pause.

"King uf Earth—vat do you mean?" demanded Prof. Pfeffler.

"Well, let us sit down first." A pause, then "Do you remember last spring I made the remark that . . ."

"Ja. I remember. You said dot you vas going to destroy all der natural enemies uf insects. Und vot aboudt id?"

"I have," replied Dr. Riis.

"Vell," said Prof. Pfeffler, "if you are going to start dot again I vill go."

"No, no my dear Herman, wait. Possibly I misstated it a bit."

"Thank you."

"As I said, I possibly misstated my affirmation. It might be more correct to say that I have evolved a species of insect which is immune to most natural insect enemies."

"You haff? Vell dot is interesting."

"That insect you just saw come out—the *Rex Orbis Terrarum*—is the first specimen to exist. He combines all the defensive and offensive qualities of the insect world. It took eight generations under laboratory conditions, to get him. Ordinarily he has two generations a year.

"However, this little specimen is better equipped for the struggle for existence than any other living thing in the world's history. He flies, runs, and can live under water. He can go for long periods without food or water, his bite is poison, he can sting, he has an offensive odor, he has an exceptionally tough armor, he is unpalatable, he can stand climates ranging from Arctic to torrid, he can live with equal ease in glaring sun or total darkness; in short, anything less than an automobile wheel or nitric acid would be quite harmless to him. If swallowed by a bird, he will poison the bird, then eat his way out after leaving his eggs in its body. He is more prolific than even the most prolific insects; in fact, in a short time he would be up against the same difficulty that the oyster would be up against—a scarcity of material to be made of."

"Und how," asked Prof. Pfeffler "do you know dot all dis iss so?"

"His immediate parents" replied Dr. Riis, "ran through the gauntlet of the tests. They produced about 50,000 eggs, 50 of which I have preserved. The little larvae are hatching now—even the eggs, my dear Pfeffler, are tough. If eaten they pass through a bird's system like a grain of sand. Well, now let's see how our infants are coming on."

Going once again to the big cage the two scientists found that almost all of the larvae had metamorphized and the rest were about to come out.

"If dis iss true," said Prof. Pfeffler, rubbing his hands together, "ve vill be famous, Dr. Riis."

"I don't think so," answered the other. "I shall make the tests for your benefit and then kill every one. It wouldn't be exactly nice to have these things turned loose."

Suddenly Prof. Pfeffler had an idea.

"Let us take dose over to-de laboratory und apply the tests there. Id vould mak a good topic for mein *Dummkopfs* to write an oxberiment baber upon."

"Well—all right," agreed Dr. Riis. "Your class begins at 11? Then if you will help me, I will do it."

TWENTY MINUTES or so before class time early students might have observed two elderly gentlemen, whom they would have recognized, as being on the Faculty, crossing the Campus toward Biology Hall carrying a large glass cage between them. Inside fifty little yellow beetles with short stocky legs and heavy wing cases preened themselves and essayed to climb the glass walls of their prison.

Halfway across the Campus Prof. Pfeffler suddenly set his end of the box down.

"Sssh—" he whispered "it's a *Callidrayas Eubule*—on dot vaste can. Your handkerchief—*mein Herr Doktor,* und I vill haffhim!"

Crouching low he began to stalk the butterfly while Dr. Riis sat on a nearby bench and watched. Closer and closer he crept, when without warning his prey darted into the air and fluttered a dab of brilliant color, a yard above Prof. Pfeffler's head.

"Donnerwetter!" growled that person and forthwith took after his quarry. *Callidrayas Eubule,* however, flew high and the best Prof. Pfeffler could do was to run in erratic circles with his eyes upraised. And so it was that he did not know where he was going until he heard a cry of alarm from Dr. Riis, a smash of shattered glass, and he was thrown headlong to the ground, his feet tangled in the cage of *Rex Orbis Terrarum.*

Dr. Riis rushed to the scene in alarm. He helped Prof. Pfeffler up and then began to look excitedly through the grass. A good dozen of the new beetles had escaped—some were already opening their wing cases in preparation for flight. Dr. Riis became frantic. He scooped up the creatures in spite of bites and stings, and jammed them into his pockets, his hat, the box. Prof. Pfeffler, catching his fear, halloed lustily for help while he held his barked shins.

Several students came in answer to his cries and aided in the search. The insects seemed unable to fly yet—their wings were

still damp and so finally all seemed to have recaptured. Tying a handkerchief over the broken glass two students shouldered the cage and carried it to the laboratory. There the first thing Dr. Riis did was to take a census. There were only 48 beetles in the cage—it fell short of just two to make the full number.

Neither Dr. Riis nor Prof. Pfeffler had any heart in the demonstration that followed. While the former extolled the virtues of his pets, the latter fidgetted nervously and gazed out of the window. After a moment or so he took up a pencil and pad and engaged in writing busily for some moments. In the meantime, the survivors were all executed by the simple expedient of filling their jar with chlorine. Keeping a few samples for themselves, the two scientists distributed the remaining corpses to the student body. As Dr. Riis finished this his friend handed him the sheet of paper. Dr. Riis looked at it with an expression first of surprise and then of horror. Finally, he turned to the student body and in a few brief words explained the accident of the morning.

"If those two beetles are not captured or killed within a few days," he explained "they will lay about fifty thousand eggs. These will hatch near the end of this summer into 50,000 beetles, since the eggs are practically invulnerable to animal or insect attack. One out of every two of these producing 50,000 eggs will result next spring in 1,250,000,000, which will get busy at once so that at the end of the Summer the Third Generation will number 31,250,000,000,000. I perceive, gentlemen, that you do not see the serious consequences of what I say. Thirty-one trillion of these beetles will completely devastate the country. Then, if the Third Generation is allowed to multiply unchecked, which will be beyond the power of man to prevent, the Fourth Generation, two years from now, will produce 781,250,000,000,000,000—Seven hundred and eighty-one quadrillion two hundred and fifty trillions of *Rex Orbis Terrarim.* One, for every three square inches of Earth's land area. Why, in one day every blade of grass, every leaf on Earth will be eaten up. Other insects, mammals, birds or reptiles will be either killed outright by the swarms of beetles, or will die of starvation in the desert the world will be after the Fourth Generation has starved itself to death. If the First Generation ever gets a start we may all make up our minds to die the Summer after next. The only way we can save ourselves and the world is to catch these two wretched insects, which are on the Campus, and exterminate them!"

DR. RIIS PAUSED and wiped his brow.

The assembled students moved uneasily and whispered together. Varied were the receptions given his words. Some seemed inclined to scoff; some apparently took it seriously and whispered together in frightened tones, but the great majority simply stared, quite uncomprehending.

Prof. Pfeffler whispered to his colleague: "Say somedings! If ve don't make dose blockheads hunt for der *Coleoptera*, ve iss doomed! Tell the loafers you vill give extra credits to any biology student vot finds dem. Dot iss der only ting that vill move dem!"

Dr. Riis arose again and offered the suggested reward. The answer this time was more positive. As soon as the period was over they bolted for the Campus in a body. The two Professors stayed in the laboratory to await results. Prof. Pfeffler engaged in viciously transfixing the dead *Rex Orbis Terrarum* with pins, for his collection. Dr. Riis, by the window, spoke:

"The chances are a hundred to one that our specimens will not be found. They will take wing and fly—no one knows where. We must plan ahead, for the day when the Fourth Generation begins to hatch. If we have stored vast quantities of food, enough for several years, the human race *may* be able to live through the period before it can plant again. But it would require bumper crops for several years, and after that careful husbanding of all food. Herman, if our specimens are not captured, and the worst comes, there is a chance of the race surviving, if they are warned in time." Prof. Pfeffler looked up, a stabbed beetle in one hand.

"Ja", said he "und if ve warn dem you vill not only be hooted all ofer de country by der Press, but vill probably lose your job as incombetent dreamer."

"But consider," pursued Dr. Riis "if they are not warned it will be too late. I must. What if I do lose my job? I have enough to last two years; besides the Second Generation will have everyone so scared that the University will be closed anyway. No, Herman, job or no job, we will have to give warning."

"Vell," said the other "how are we going to go aboudt id? Newspapers? Government? Scientific journals?"

"Maybe—the Government will help most—if it believed, but it would be the hardest to convince—the newspapers . . ."

Suddenly the door flew open and a group of excited students entered.

"We have got your bugs!" cried the leader.

Both men leaped to their feet.

"Are you sure?" demanded Dr. Riis. "Absolutely—spotted them right away; here they are—All there!"

Dr. Riis stopped in his track and looked with disgust into the open hands. "Earwigs!" he snorted, and returned to his friend. The students glared after him with disappointment.

"Vell, ve might just as vell go ahead und warn der vorld," said Prof. Pfeffler, ignoring the young biologists. "On dis Campus dose *Coleopters* are as safe as if dey vas in your cage."

The students left and Dr. Riis, entering his office took up the telephone.

"The newspapers—which?" he paused.

"A nephew of mine works on the *Times*" said Prof. Pfeffler; "call dem op und I vill spik mit him."

A moment passed, then "Ja, ja. Hello. I vant to spik to Fritzie Pfeffler—Ja—Hello? Iss diss you, Fritzie? I hav der grand scoop for you! Mein friend here, Dr. Riis, has discovered a *Coleoptera*—no, no, not Cleopatra—*Coleoptera*—beetle. Und he has . . . ' "

3

THE COMING OF the Fall Quarter brought its usual trainloads of returning students and professors to the University. And on one of these came the famous Dr. Peter Riis and his equally famous colleague and supporter, the Hon. Prof. H. Ludwig Pfeffler. Neither smiled when they noted the crowd of students at the Depot.

Prof. Pfeffler spoke to Dr. Riis. "Der next time," he said heavily, "you make an epoch making discoffery, do your own telephoning aboudt id."

Dr. Riis made no answer for thru the window he saw students watching them and he heard the words shouted, "Rex Orbis! Rex Orbis!"

"Let us not get off," said Prof. Pfeffler, "ve can stay on to the next station und den take a taxi."

"Go ahead if you want to," replied Dr. Riis in a not too pleasant tone, "you were the one that had to go and call up your crack-brained nephew. Those headlines will shame me to my last day! *'Professor Discovers Bug.'* Our distinguished entomologist, Dr. Peter Riis, has after years of patient toil isolated the Cleopatra Bug, which is going to destroy the world."

"If dose two wretched beetles had only lifed und multiplied," groaned Prof. Pfeffler, "ve vould be vindicated. But now—ach! mein Gott! Listen to dot!" This as the train finally stopped and the sounds from a crowd of biology students became audible. *"Rex Orbis Terrarum!* The world is doomed!"

"If I can get their names," growled Prof. Pfeffler, entering the aisle, "I vill haff dem exbelled."

When the two arrived at the apartments they shared together, Dr. Riis was informed that the President of the University wished to see him at once. Leaving Prof. Pfeffler to unpack, he hurried to the President's office.

Many and varied were his thoughts as he walked across the Campus. He would be reprimanded, probably. He wouldn't really be censured for as head of the Biology Department his resignation, which would follow such a scene, would be harmful to the University. But he would be informed, in the peculiarly sarcastic manner that the President could assume, that he had overstepped his duty, and that he had harmed the University's reputoation. He would be advised to confine his researches to his own rooms.

Regaining his composure by an effort he went on to the President's office. He entered and was immediately shown to the inner room. The President behind his desk, stood up.

"Good morning, Dr. Riis. So glad you came at once. Won't you have a chair?"

Dr. Riis sat down. "You wished to see me?"

"Yes. About your insect creation . . . "

"I have only one thing to say about that, Dr. Spencerman. My recent researches with the *Coleoptera* were not conducted with the intention of creating any sensation. I introduced my specimens into the laboratory as an interesting demonstration for the classes. Our unfortunate premature telephoning to the *Times* was the result of a natural fear. That fear, it seems, has fortunately proven groundless. I merely wished to say that . . . "

Dr. Spencerman interrupted him: "Before you continue, my dear Dr. Riis," he said, with an odd expression, "would you mind identifying this beetle?"

He held out his hand, containing a small dead insect. Dr. Riis looked.

"Where did you get this?" he demanded, quickly.

"You recognize . . . ?"

"It is Rex Orbis Terrarum! Where did it come from?"

"The Campus. I picked it up yesterday. Later I examined some of the trees. I found numbers of these insects . . . " He paused.

Dr. Riis looked again. He closed his eyes for a moment.

"Well?" asked Dr. Spencerman.

The other touched his eyes with his fingers and shook his head as tho trying to drive away a bad dream. Then . . .

"This is the first generation,

Dr. Spencerman. They number fifty thousand. Next Spring will find one billion, two hundred and fifty million—it is simply a question of geometrical progression."

"And then . . . "

"You are as good a mathematician as I am."

Dr. Spencerman laid the insect on his desk. "You take a rather pessimistic view. If, as you said, the fourth generation would soon die because of lack of food, why couldn't we store enough food to last thru that time?"

"If they would start now to save and prepare, they might. But you recall the results when Dr. Pfeffler and I tried to warn . . . "

"I know. But as President of the University . . . " "You would only attract the more ridicule," finished Dr. Riis.

"Well," said Dr. Spencerman, "I can send notes to the Chairs of Biology of one or two neighboring Colleges, inviting them to a conference. Then we could present your evidence, and with their backing . . . "

"If they learned what the Conference was about, they would not come. Our trying to warn people is simply a waste of time. Personally I am going to move to Northern Alaska next Summer, where I can make observations until it is all over. Then, if anyone, is still alive I may come back. Do you want to come with me?"

Dr. Spencerman shook his head, in a gesture that meant many other things besides a negation. He strode to the window.

"I can appreciate your position, Dr. Riis," said he. "But I am going to call a conference. I believe that a group of scientists like those I have in mind will convince people."

"Very well," replied the other. "If I can be of any service I will gladly help." He was at the door. "And good day."

THE RESULTS OF Dr. Spencerman's conference are too well known. Taking Dr. Riis' advice, the President did not clearly define its object so that several of the Professors were not at all sure what it was about. It is surprising that they came at all.

Everything seemed to be going well until Dr. Riis was introduced as the chief speaker. At that, fully half of the delegates arose and left in disgust, declaring that they would not be party to such "sensational idiocy!" Only one stopped to condole Dr. Spencerman, and even he expressed the hope that as soon as Dr. Riis' bad influence was removed the President might be freed from this foolish fear.

And then came the newspapers. Dr. Riis resigned, and ac-

companied by Prof. Pfeffler, who had done likewise, retired to the former's summer home on the Lake. By the time the Conference had ended Winter had begun. The most thorough search failed to reveal a trace of *Rex Orbis Terrarum*.

By the time that the next Spring came around, the public had completely forgotten the "*Rex Orbis Terrarum* farce." But in the minds of at least three people it was far from the least important thing. The two who had introduced the beetle into the world returned to town very quietly and went at once to the President's office. Dr. Spencerman, to whom they had previously phoned, met them at the door. He carried a long pin in his hand. On its end was a diminutive yellow beetle, quite dead. Dr. Riis regarded it.

"This season's crop?" He asked, quite calmly.

"Picked it up a couple of hours ago in my garden," replied Dr. Spencerman. He returned to his desk and brought a small brownish larva. "Is this any relation?" he asked.

"It is the larva," replied Dr. Riis, without enthusiasm.

"I suppose they will start coming out in force soon?"

"If it is warm the first regiment will begin the invasion tomorrow. Then . . . "

"Vell, leds go to der theatre tonide," said Dr. Pfeffler, stepping suddenly upon another *Rex Orbis Terrarum* that had lit on the porch beside him.

Dr. Riis spoke the truth when he prophesied the coming of the insect vanguard on the morrow. The forenoon was hot and sunny, and the afternoon was still young when *Res Orbis* began to come. From under stones, bits of wood, from the trunks of trees, bushes, from under lumps of sod, came the yellow insects. They seemed to materialize from thin air. Inside of two hours one could not walk a hundred yards on a vacant lot without startling literal thousands into flight. Dr. Riis and his two colleagues watched the awakening from the President's porch.

Crowds of students hastening from one afternoon class to another, stirred the creatures into flight by the thousands. At first they seemed unnoticed, and then the watchers saw students attempting to pick the creatures up, but dropping them suddenly as they were stung.

Some Zoology students stopped to examine them. There were shouts back and forth—a sudden commotion. Dr. Riis heard his name mentioned. A little group, huddled together, broke and started for the President's house. The three there waited silently, knowing what was coming. The leader of the advancing group carrying an

insect, gingerly in one hand, suddenly pointed and cried—"It is Dr. Riis. Where did he . . . " He broke off, at the porch, and held out the specimen. Asked the question breathlessly.

Dr. Riis drew himself up. "This," he replied, in his best lecture room manner, "is a member of the second generation of *Rex Orbis Terrarum*. By tomorrow at this time there should be one billion two hundred and fifty million within five hundred miles of the city. But I believe I have already explained the beetle to you and numerous others here."

He turned to Dr. Spencerman. "Shall we go in?"

They left the students gaping, amazed. Other specimens were brought up. There was no scarcity of them. That they were the new insects Dr. Riis had had a year ago, there was no doubt. Too many remembered the details.

One billion two hundred and fifty million! Over half as many as there were people in the world!

A crowd of students hung about Dr. Spencerman's house until evening trying to get to Dr. Riis, but the latter did not show himself once. "Things," said Dr. Riis, "may become very unpleasant for us, and the insects will not be directly to blame."

THE NEXT MORNING that part of the world which subscribed to the *Times* and the other morning paper, was aware of the arrival of *Rex Orbis Terrarum*. No murders or divorces had occurred within the last twenty-four hours, so without exception Dr. Riis' insects were given headlines. A double panel picture of the beetle and its creator and below was a purely fictitious interview with the savant, giving all the information on the coming two generations. In the main, it was accurate, for many students' notebooks had contributed, and when Dr. Riis read it at his breakfast table he nodded his head in approval.

Prof. Pfeffler started to ask him what unpleasant thing he had anticipated, when the door bell rang. "Reporters," said Dr. Riis, and answered it.

It was. Two reporters and a photographer. Dr. Riis invited them in, quite graciously, and said he was ready to answer any questions. For twenty minutes he was interrogated and then the question he had expected was put:

"What is your advice to the world to escape the effects of this coming plague?"

"Arsenic or strychnine."

"Ah, that's good. You have the solution to the problem already. And in what form would you administer it. As a spray or in food?"

"In food."

"Would it be—liquid food, or . . . "

"Personally I would prefer coffee."

"Coffee? But . . . "

"It depends altogether upon one's taste. Some prefer chocolate."

"Your insects prefer chocolate? You are joking, Dr. Riis?"

"Not a bit. I am quite serious. If people do not want to die of famine or insect stings, they had better take strychnine."

"What, come now really, you said something about storing up food . . . "

"Well, where is the food to store? Last Fall's harvest is almost all gone now and there is not enough canned or frozen food to last the world six months."

"But next Fall there will be a harvest."

"I am sorry. There will not be any harvest next Fall. Know how many insects will hatch out about eight weeks before harvest time?"

"You say 'thirty-one trillion', but that many could not affect the harvest beyond a small locality . . . "

"You don't know what thirty-one trillion beetles can do. When a few hundred million locusts go across country they denude whole counties. The third generation will do everything but knock the country flat. It will make America an example of what the world will be next Spring. Well, I will give you a few hints. This generation has just come out. They will lay their eggs in about two weeks. If all transportation between this State and the rest of the country is cut and everyone that had a gun is sent to the borders to shoot all birds and animals that try to cross, you *may* be able to curtail the third generation. You could also try poisons—ordenary insecticedes are useless. Try chlorine, carbon monoxide; spray nitric or hydrochloric acid on the eggs; if everyone works to the utmost all Summer, the third generation might possibly be reduced in number. It is a very slim chance. But at present, it is the only one. Allow me to restate, strychnine in coffee is very effective in preventing insect annoyance."

The interview was published in full in all papers, but as far as results went, it was valueless. The Governor of the State refused to take any action. The Interstate Commerce Commission refused to even consider the matter, and as the Legislature had adjourned for the Summer and its members were either acquiring a coat of tan or many trout, nothing was done. There was, however, a notable increase in the sale of insect poisons and several chemists' supply houses received large orders for bottled chlorine and nitric acid

from persons who were very evidently not chemists.

The second generation was short lived and by the 1st of July its last member had vanished from the face of Earth. The sun shone down upon a world where only grasshoppers and butterflies flitted over the ripening crops. And as the warm days of Summer passed, people forgot the scare and Dr. Riis and lived blithely on.

I

THE VANGUARDS of the third generation came in the middle of August. They came slowly at first and then faster. The prominence the papers gave to the creatures was in direct ratio to their hatching period. On the second day there was a paragraph on the back page between Miss Velma Lee Fritts' wedding and a patent medicine testimonial. The next day the second page beside the marine news column — then as the beetles continued to hatch in ever increasing multitudes, the panel of the Spring before was dug from the morgue and put on the front page with small headlines. But by that time, things began to happen. The farmer who went to bed chuckling over 'thet dern fool' Dr. Riis and his bugs, awoke to find the sky black with tiny flying things which settled upon his fields like the locusts of the Old Testament.

Orchard owners found their laden trees breaking under the weight of insects. Autoists were compelled to stop when their windshields were covered with bodies and their radiators clogged with *Rex Orbis Terrarum.*

To the Department of Agriculture at Washington, poured telegrams from individual farmers, from co-operative packing and canning houses, from the wheat fields of Minnesota to the powerful California Citrus Association. All cried for help. A plague of beetles was sweeping over their fields: their crops would be destroyed; all poisons they tried were useless. Telegrams were dispatched to Dr. Riis. At first they asked him to verify descriptions, then they begged him for some antidote; finally their tone changed and in threatening words he was commanded to stop this plague, which he had caused, or be responsible for the consequences.

When he read the latter communication from Washington he smiled grimly.

"That," said he to Prof. Pfeffler, "is what I meant when I said unpleasant things would happen. When they see how foolishly they have acted they try to lay the blame on me. When shall we depart for Alaska?"

It soon became apparent that the depradations of the third generation were not confined to the United States. Mexico was treated

to a similar plague, and the insects infested even the jungles of Panama in noticeable numbers. This rapid spread could be explained only by their tendency to spend most of their lives in flight. Cuba telegraphed that her sugar crop was ruined, and even islands in the Antilles where ships touched from the States, had smaller numbers of insects. Hawaii was devastated; somehow, members of the very first generation must have been shipped there. After weeks of frantic waiting England, France, and Italy simultaneously reported the insects, which for some unknown reason did not hatch until later. But abroad, the plagues were not as serious, for vast as thirty-one billion is, it was not great enough to devastate the whole world. It remained for the fourth and last swarm to finish the work.

A week after the first plague had swept the country, the swarm reached its maximum. All the eggs were hatched; the insects had only to live out their six weeks of life, lay their eggs, and die.

As may be expected, every effort was made to fight the creatures, but it was a hopeless job, more hopeless even than the blockade Dr. Riis had suggested in the Spring. After two weeks of it large areas of the country where the plague was the worst, were placed under military government, and many millions of dollars were spent on poisons; airplanes to spray them and thousands of men to seek out the newly laid eggs.

In Iowa a belt of many thousand acres of wheat was burned in an attempt to arrest one of the swarms, but of no avail.

Dr. Riis shook his head sadly at all this and put in big orders for canned food to be sent to the little Mission at Fort Yukon on the northern bend of the Yukon River. At Dr. Spencerman's suggestion a large radio was included in the outfit to catch, as he put it, the last cries of humanity.

The last cries of humanity, however, did not require radio to make them audible to Dr. Riis. Telegrams and letters reached him in mounting numbers, containing appeals for help and threats of vengeance.

"You have ruined my crops. You have made paupers of my children. I am coming to kill you!" wrote one farmer. Dr. Riis asked for a police guard, and bought tickets on the next boat sailing for Skagway. Dr. Pfeffler, after being assaulted once, resorted to a grotesque disguise, when outside. Even the President was not safe off the Campus, and the newspapers gave scant sympathy to him. *The Times* which had been the most caustic the year before, now heaped abuse upon the unfortunate trio without cessation. "Cowardly scoundrels

who loosed death upon the world and then fly like the cravens they are before its consequence."

FOR SEVERAL WEEKS the plague did not directly affect the cities. Their skies were not darkened and no one's living was visibly hurt by *Rex Orbis Terrarum.* But it was not long before the big wholesale commissary companies, seeing their supply of raw foods seriously curtailed, prepared for the morrow by advancing their prices. The advance was sudden and very stiff. Fresh vegetables went up first; then flour; butter and other animal products soared the highest, as the food supply for cows was cut off. Even the price of meat advanced.

Now the trouble of which Dr. Riis has spoken began in earnest. When Mrs. Smith, going to the corner grocery, found milk 45c a quart and butter $1.60 per lb. she raised that grocery store's roof. And when flour began to cost 80c a lb. and sugar approached the coffee it flavored in price, the clamor the farmers raised became tame in comparison to that of the city dwellers. Thousands found themselves dependant upon canned fruit and meat for their subsistence, so expensive had become the staples.

And finally to cap the climax, big manufacturing plants seeing that the very world was going to close business, began to shut down in advance, throwing thousands out of employment.

The result was a terrific social unrest that threatened to speedily become anarchy. Soap box orators materializing seemingly from nowhere, like the beetles, attracted vast crowds of the hungry and jobless.

Especially in the big cities of the East, where there were large masses of ignorant foreigners, the appeal of the soap box orator was profound. The police were helpless. Hungry looking individuals took to hanging around Dr. Riis' house and refused to be driven away. He considered moving to a downtown hotel until his boat left. Dr. Spencerman, at the insistence of his wife, moved into one of the big Dormitories, where the presence of several hundred loyal University boys assured him safety.

IN THE meantime, the scientific minds of the world were brought to bear upon the problem. Huge rewards were offered in every country and many came forward to claim them, but none of the suggestions were practicable. One by one the scientists lost hope, and tho keeping doggedly on they knew they were beaten. There were seven hundred and eighty one quadrillion of *Rex Orbis Terrarum* eggs in the world, and unless those eggs could be destroyed, the coming of Spring would be the end.

With the arrival of the first breath of Winter, the third generation vanished as suddenly as it had come, leaving ruined crops and a terrible cloak of fear over the world. Dr. Riis and Prof. Pfeffler, practically prisoners in their house, sat at the window in company with Dr. Spencerman. For many minutes none of the trio had spoken. The cold grayness of the Autumn day had seemed to enter their souls. The brown leaves falling in eddies earthward carried with them, to their eyes, the last hopes of humanity.

Dr. Riis spoke: "You know, I was thinking just a little while ago of an interesting thing. This time next year we will all be gone. Excepting the fish and a few Arctic animals—perhaps some Eskimos—the whole planet will be void of life. But our civilization, the great cities, ocean liners, highways, will stand like monuments for thousands of years. Perhaps some day away in the future, the archaeologists of a new race will be digging into our kitchen middens and writing learned treatises about the preplagal period."

Dr. Spencerman nodded his head slowly. Prof. Pfeffler gazed out of the window unhearing, a peculiar expression on his face. As Dr. Riis became silent his colleague took up his discourse.

"Yes, I suppose so. It is just about the finish now. I wonder if they will ever get the true story of how it started? A scientific experiment performed as a result of an argument; then the world's leaders stubbornly blinding themselves to the one salvation. And now the two who might be called responsible are kept from a violent end only by the fast weakening hand of Authority. It won't be long until that Authority itself will be willing to rend you."

Dr. Riis attempted to laugh with a sorry result.

"Bah! What is the use of civilization if it vanishes at a hint of danger and leaves—animals? I am going to Alaska until the last one is stung to death; then I'll come back and write a history of it for any chance visitors from another planet. Will you join us Dr. Spencerman?"

The President shook his head. "No. I have a family and many responsibilities. I have stored enough food to last two years and with the house properly barricaded I think we can live thru next Spring."

"Well," answered Dr. Riis, "next Fall we will come back to conduct the world's *post mortem* and if you don't survive we will give you decent burial."

At this Prof. Pfeffler suddenly came to life.

"I tink," he said, "dot ve vill come back early in der Spring.

Und dere wont be any *postmortem* to conduct."

"What do you mean?" demanded Dr. Riis, surprised.

"I mean," responded his friend, with perfect equanimity, "dot I haff found der solution to der problem. Der vay to remofe *Rex Orbis Terrarum* before he become too troublesome."

The other two sprang to their feet. "How? Explain!" they cried in one breath.

"Quite elementary," said Prof. Pfeffler. "Ve fight fire mit fire. Against der great numbers of der beetles ve vill turn efen greater numbers of der enemies—der bacteria! Ve haf only to find one dot kills *Rex Orbis Terrarum,* breed into him certain qualities of rapid reproduction, und der broblem iss solved."

"Why," said Dr. Spencerman, "you are right! It will work!"

"Of course it vill vork," responded the head of the Department of Physiology, "oddervise I vouldn't haf thought of it. I vill take specimens uf all possible tybes of bacteria to Alaska; breeding tanks, microscopes, electric light plant—everything necessary to conduct bacteriological research. Ve vill isolate our tybe dis vinter und next Spring ve vill kill off your pet beetles, mein Herr Doktor."

IN THE DAYS of waiting before the ship sailed for Alaska the two savants proceeded to assemble the necessary supplies for their researches. Most of these were procured at the University, but some of the purchases necessitated trips downtown. Upon one of these trips Prof. Pfeffler was recognized, and narrowly escaped assault by some of the half savage laborers who filled the city. A larger police guard was assigned to Dr. Riis' house and the two decided not to venture out again until the boat left. As Dr. Riis said, "the dark clouds of humanity's displeasure were lowering upon them." It would be but a matter of days before a tempest would break upon the two.

Finally the day before the boat sailed the storm broke. A mob appearing from downtown and growing as it progressed, bore down upon Dr. Riis' house. Two students warned him a few moments in advance, and offered their dilapidated Ford for transportation. The two professors loaded their suitcases into the back seat and beat a noisy retreat down the alley as the advance guard of the crowd reached the front door.

Disregarding all speed regulations they drove a score of blocks, and then stopping at a drug store entered to telephone back to Dr. Spencerman. But he was already warned, and with his wife, was

preparing to move to a Dormitory. As Dr. Riis hung up there was a commotion in front of the Drug Store. A crowd of men entered led by the druggist. Dr. Riis understood at once. The druggist recognizing him, had gone into the street while they were telphoning and had summoned some stragglers from the mob. More like jungle beasts than the civilized beings they had been a few weeks before, the mob charged the two whom they held responsible for their misfortunes.

"Der luggage!" cried Prof. Pfeffler, and then he had to think of something else. Dr. Riis, who had more presence of mind, ducked behind a counter and expertly aimed a bottle of Listerine at the light. Unfortunately he missed, but the Listerine landed in the upraised face of the druggist and so did almost as much good as if it had struck its objective.

Then, dragging Prof. Pfeffler after him, he ducked for the back room. Here he first switched out the lights, and then taking an immense carboy of Castor Oil, he smashed it on the floor in front of the door. Prof. Pfeffler started a question but he was given no chance.

"The window," whispered Dr. Riis. Groping blindly, Prof. Pfeffler seized an apothecary's mixing bowl and heaved it thru the pane. Suddenly the druggist, wiping a mixture of blood and Listerine from his face, appeared. Cursing incoherently he started towards them; without warning he landed on the floor with a bump. The others crowded after him, but they too slipped, grappled frantically bringing down a shelf of bottles and fell into the spreading pool of slippery Castor Oil. By this time Prof. Pfeffler had one leg thru the window. Grabbing anything within reach Dr. Riis bombarded the figures silhouetted against the door. A moment was enough, for dropping ten feet into a pile of tin cans, plaster and nettles, the two scientists made their escape.

Prof. Pfeffler was for making it the rest of the way on foot. But finally they returned to the front of the drug store. A small crowd had collected about the door, completely ignoring the Ford. Dr. Riis and Prof. Pfeffler rolled away by gravity, leaving the ignition off for several blocks. As Dr. Riis finally turned it on, Prof. Pfeffler, looking back described the form of the druggist completely covered by a variety of medicines, being dragged forth to the cries of "String him up!"

5

DR. RIIS REPLACED the thermometer on its hook and redonned his mitten. "Forty below," he announced thru a cloud of steaming breath. Prof. Pfeffler

scrutinized the instrument closely. "Forty-vun," he replied glaring. "Leds go inside oudt of dis beastly kalt." Closing their cabin door upon the blackness that was midday, Dr. Riis turned on the radio. Thru the intermittent crackle of the Northern Lights, came the voice of the announcer far to the South.

" . . . the news that word had unofficially come from the Rockefeller Institute that all hope has been given up, has precipitated serious rioting in several Eastern cities . . . the Red Cross has been partially successful in combatting the famines in the Pennsylvania coal regions . . . word has been received from India that all remnants of British authority are gone, and an unestimated number of whites and natives have been killed in rioting . . . the announcement that Ford and General Motors have suspended operations indefinitely, coming as it does on top of the closing down of all the Standard Oil Companies, has been the most serious blow to finance during the past three weeks . . . "

Dr. Riis switched it off. "We had better get back to work, Herman. It is nearly February now. Let us see how your latest pets have responded to the albumen test."

Leaving the radio the two entered thru a door which had been heavily padlocked. They found themselves in a room as different from what one would expect in their log cabin as the noonday darkness was from the daylight of the South.

Its walls were lined with racks of test tubes, of flasks, of shelves of bottles. On a rough table in one corner was a glass tank of water with an electric lamp and a number of phials submerged in it. A powerful compound microscope stood upon its case beside a well-filled slide. Prof. Pfeffler at once took one of the bottles from the tank of warmed water and taking a drop with a pipette he placed it on a slide. He looked and gave an exclamation of satisfaction. While Dr. Riis was looking his colleagues went to a wire cage in one corner and brought forth a small yellow beetle which was easily recognized as a member of the species which was causing so much trouble. Placing the creature in a jar he put a drop of the culture upon a piece of canned fruit; then he placed it in the jar. Almost immediately the beetle began to devour it.

"If this mutation," murmured Dr. Riis, "holds true for only a few cycles it will be enough."

Some hours later they returned to the laboratory and examined the beetle. It was stone dead. Wearily the two smiled at each other. Then without another word they went to their bunks, and in a moment were sleeping the sound sleep of exhaustion.

THE WARM BREEZES of April had reduced the Yukon River ice to a few small floes and chunks when the two scientists took their departure. They chartered an airplane and flew to Fairbanks, taking only a dozen sealed phials of all the apparatus they had brought. After resting a few days at Fairbanks, they took the train to Seward. There they remained over a week before they could sail out on a Seattle bound steamer. The regular boats had been taken off the Alaska run, and the little steamer they found themselves on took some fifteen days to make the voyage. Consequently, it was well into May when they arrived at their destination.

The city was utterly unlike its appearance when the two had left. It had an odd, unkempt, deserted appearance about it, and was strangely silent. The streets were filled with haggard, hungry looking people, who hung about the docks quietly in crowds. The streets were all but empty of cars, while the street cars ran but irregularly, and even the taxis were not in evidence at the dock. As soon as they had disembarked, the two pulled their hat brims well down and trudged uptown until they finally located a cab.

Taking no chances on telephoning now they sped at once to the University and after paying the exorbitant fee of $8.00 to the driver of the cab, they found themselves in front of Dr. Spencerman's house. The front windows were boarded up and Dr. Riis feared the worst, when suddenly he saw the President himself coming out from behind the house. He was dressed in old clothes and carried a revolver in a holster at his hip.

"What d'ya want here?" he demanded in a voice utterly unlike his own.

"Dr. Spencerman!" cried Dr. Riis, in amazement and rushed forward.

Greetings over, Riis explained their coming. "We have got the remedy—or rather Pfeffler has." Reaching into his vest pocket he drew out one of the phials, filled with a thick yellowish liquid.

"This," said he, "is the antidote for *Rex Orbis Terrarum.* It is a form of bacteria which we have been calling *Mors Regis* because that is just what it does to the beetle—kills him. It is a mutation from a common species of bacteria which has a peculiar power of secreting a toxin violently poisonous to *Rex Orbis,* and its rate of multiplying, or rather dividing, is greater than that of the beetle. When nourished, each bacteria will divide once every hour or about 80 hours when they will number approximately 500,000,000,000,000,000,000,000—five hundred sextillion, or more than 625,000 per each *Rex*

Orbis Terrarum of the fully hatched fourth generation."

Dr. Spencerman gasped. "But what then?" he asked, "if all the fourth generation is killed, won't the bacteria keep on multiplying until they do the same to the world that the insects would?"

"Yes, we thought of that," admitted Dr. Riis, "and experimenting we found that after the 80th generation I mentioned, the tendency is to revert to the original type, which is, as you know, a very inconspicuous and harmless member of the plant kingdom."

"How much of the culture have you?" demanded the President.

"A dozen fifty gram phials. In the laboratory it will take about two days to prepare to start shipping to various parts of the world. Is the telegraph still operating?"

Receiving an affirmative the three walked post haste to the Biology Hall of the University. The place seemed deserted, but Dr. Spencerman told them that a few advanced students were still at work trying to exterminate the plague. Within they found these standing in a little group at one window and talking in low tones. Dr. Riis wasted no time but pressed a phial into their hands.

"This," said he, "is a bacteria that is death on *Rex Orbis*—they divide every hour. We will want about 500 kilograms of them this time tomorrow. Buy all the extra equipment you need." He thrust a sheet of paper in their hands. "These are all directions for preparing the culture . . . Speed!" And he was gone.

As Dr. Riis had expected, the telephone was out of order, so catching one of the errant street cars he returned to town. There he dispatched a telegram. Its wording is now famous:

Department of Agriculture,
Washington, D.C.

Have developed bacteria which will exterminate Rex Orbis Terrarum. Am sending samples with directions for cultivation and distribution, by airplane. Send new cultures to Europe and other stations immediately.

P. RIIS.

Then going to the Airport he found that the Air Mail was still running. Taking two more of the precious phials he wrapped them in excelsior, with the directions, and after explaining to the pilot in a few terse words the importance of the package, he caught another street car and returned to Dr. Spencerman's house.

Next morning fourteen generations of the bacteria had arrived and every available container in the laboratory was filled to overflowing. That day was filled with work for Dr. Riis and Prof. Pfeffler. With the aid of a score of re-

maining students, some thousands of phials were sterilized and filled with the culture. A stencil was made of the directions and Dr. Spencerman made the mimeographed copies of them. On the 20th of May some sixteen hundred bottles were sent off to every College and University in North and South America; to all the State Departments of Agriculture, and to the Orient. In the meantime, the news that salvation was at hand was broadcast by the newspapers. The effect was electrical. Vast crowds of people began to congregate about the University. The hopless expression was gone from their faces, but there were no manifestations of joy at deliverance. Whenever either of the trio appeared, they were watched silently. It soon became very unpleasant. Dr. Pfeffler took to avoiding the streets.

"Dey make me nervous," he said, "like a kraut of hungry volfs. Ef ve succeed dey vill make uf us heroes. If ve vail, dey vil eat us op. I hope dose bacteria vill work."

However, Prof. Pfeffler would not be kept long in suspense. June would soon be coming and with it the fourth generation. The dreadful last generation of *Rex Orbis Terrarum* would come.

As soon as the Bureau of Agriculture at Washington received the culture their chemist began seeking a live *Rex Orbis Terrarum* to inoculate, in order to determine the effectiveness of the bacteria. But this was not time to demand proof. Realizing at last that they must act on faith, the Government at once endorsed the culture and appropriated enough money to send it all over the world. Everywhere the little phials were received enthusiastically, as conviction began to come that the world was saved, and doubting scientists were forced into preparing the bacteria for distribution.

HOWEVER, FORTUNATELY for the general peace of mind, the trio included, there was not a very long wait until the first insect should appear. By the 1st of June, the University had done everything in the way of preparation; vast quantities of the new bacteria were distributed to strategic points, where, without food, they were kept in a torpid state until the time should come for their 80 generation drive to defeat the beetles. Every square mile almost was covered; there remained nothing to do but to wait. About this time the heads of the Science Department of a number of other Universities came up for a short conference upon methods of distribution. Never was there such a change in manner as was evinced by those learned servants. When Dr. Riis took the floor there was prolonged cheering, and his every word was listened to with rapt attention.

By the fourth of June, however, the steadily warmer days warned the visitors that the time had come for their conference to end. Very soon they would be needed at their own posts to take part in the great battle.

The majority of them returned by air, but a few had the unexpected pleasure of riding on a train — one of the pioneer lines to resume service after the terror. In fact, throughout the world the tension seemed to be lifting. People resumed their usual occupations; street cars began to run regularly, and several hundred students registered for the Summer quarter. People looked to the day when the larvae would metamorphose with interest, instead of considering it a horrible event which would spell doom for the world.

The weather remained warm. The sky clear, and this helped to raise everyone's spirits. At the same time, as Prof. Pfeffler observed, it raised *Rex Orbis Terrarum.*

On the 8th of June a telegram came, adressed to to Dr. Riis, from Washington, D.C. — it read —

Rex Orbis Terrarum appearing in Panama and South America. Bacteria being spread — no results as yet.

Later that night another arrived from the same source.

Insects metamorphosing in Mexico and Egypt. Mors Regis used as per directions. Will advise further appearances.

On the 9th of June a telegram arrived direct from Mexico City.

Insect appearing in great number. Crops threatened. Bacteria used but no results. How long is period of incubation?

And on the day after a long and frantic telegram from Washington: —

Plagues of Rex Orbis Terrarum sweeping everywhere South of Tropic of Cancer. Serious in Mexico, Egypt and India. Insects appearing in Florida and Texas. Bacteria ineffective. What is the period of incubation — advise by telegram or radio immediately. Situation desperate.

When Dr. Riis read this last telegram he looked at his two colleagues with a very serious countenance. After they had read it, he addressed them:

"Under laboratory conditions the bacteria were fatal to the insect, but here something seems to be different. It may be that it will take a longer time to have effect, it may be . . ."

He broke off. Both the others

understood. If bacteria did not take effect . . .

For the next few days telegrams and letters by the hundreds, poured upon Dr. Riis and Prof. Pfeffler. They were frantic-appealing. People were first confused then suddenly terrified. Each day the plagues crept Northward, and tho millions of gallons of the culture were distributed as directed by Dr. Riis, there was no decrease in the numbers of insects. In Mexico City one day there was no sunrise; the sky remained black as midnight; black with the bodies of billions of flying creatures. The street lights were turned on, but to no avail. The sky remained as dark as tho the sun had gone out. The inhabitants, sick with superstitious terror, stayed indoors in prayerful prostration, listening to the roar of the beetles outside—like the thunder of wind and hail.

In India the natives were more used to plagues, but they were not prepared for such as this. From Natal to Ceylon, the tropic moon was changed to a gray twilight, and the noise of the wings drowned out speech. The Valley of the Nile lived thru a repetition of Bible times, magnified a thousand fold. Restless clouds of *Rex Orbis Terrarum* ranged for hundreds of miles over the deserts of Arabia and Northeast Africa.

All through the Northern hemisphere people began to move South. Australia, South Africa and Patagonia were still comparatively free from the ravages of the terrible fourth generation—there the end would be postponed by some eight weeks. And before that time, maybe something could be done! Something!

6

DR. RIIS and his two colleagues lived through a repetition of the social unrest of the Fall before. But it was short. Communists who had successfully resisted the efforts of the police to disperse them, scattered in a panic when a gust of wind blew a few thousand beetles down the street. From the Campus they arose steadily, relentlessly. Everyone was forced indoors. Behind the windows in the laboratory, Dr. Riis, Prof. Pfeffler and Dr. Spencerman watched the hosts spring up as the magic warriors of Grecian legend sprang from the Dragon's teeth.

During the afternoon they roared through the skies in ever thickening throngs. The trees swayed

During the afternoon they roared through the skies in ever thickening throngs. The trees swayed as their bodies beat against them, and the swarms, instead of being carried by the wind, now made a small gale in the direction of their flight. About three P.M. a telegram was telephoned to Dr. Riis

from Washington. It was brief. It read:

Plague sweeping world. All hopes given up. Bacteria useless. Work to the end.

ADAMS,
Secretary of Agriculture.

All through the afternoon the insects hatched, and when night fell Dr. Riis expressed his belief that the majority of the fourth generation had made their appearance on Earth. "During the first day," he said, "the insects would eat nothing, but on the morrow when their wings are dried they would begin to eat. And after that the vegetable kingdom would have just about five hours of life."

In spite of the fact that it was Summer, the shade of evening came fast. There was no sunset; its colors were completely obscured by a vast billowing yellow cloud of *Rex Orbis Terrarum*, trying out their wings. An airplane which had fought its way down to the City airport reported that as far as could be seen Earth was covered for a thousand feet with what looked like an ochre fog bank, out of which the mountains rose like islands.

When night came, with its chill, the greater part of the swarm settled to earth. A few people frantically attempted to destroy them by fire, lighting fields of dry grass, but the only result was to send vast droves of the creatures aloft, until finally the flames were smothered with their bodies. And so at last man's intermittent efforts ceased, and the human race retired indoors as though to escape the horrible realization of the morrow.

With the landing of the insects the telephone went dead, but with Dr. Spencerman's powerful radio they were able to hear the last words of the race—so to speak.

These came from New York, center of civilization, where man's strongest stand against the invaders would be made. For once the program was not enlivened by music; the voice of the announcer was of sufficient interest to hold all. When Dr. Spencerman tuned in he was reading messages from the Continent. Plagues. Bacteria spread even after they knew it was in vain. Then with the coming of night, hopeless despair. Unless some one could do something, the morrow would be the last. News of suicides by those who could stand the strain no longer. News of a dreadful railroad accident caused by rails made slippery by millions of insect bodies. Of traffic piled up on roads leading into the Metropolis. Always the same. Disaster; desolation; death.

The three scientists, two of whom had such an intimate association with this, listened with an

almost morbid interest. However, it soon became obvious that the broadcast would continue all night, so finally Dr. Spencerman, wearily turned the radio off and made ready for bed.

They would sleep well . . .

All was over.

THE COMING of the dawn brought the trio up early, at five, before the sun had appeared on the horizon, and while the morning chill kept the insect hosts on the ground.

The sky was remarkably clear. One could see for miles across wooded hills to the mountains. The venerable trees on the Campus were in full leaf; the lawn was brightly flowered. But over all like a volcanic *scoriae,* lay the yellow blanket of the insects, lying dormant waiting for the warmth of the sun to bring them into activity.

Walking out on the porch, his feet crunching the creatures, Dr. Riis picked up one of the beetles. It was perfectly motionless; legs curled under, wing cases shut tight. Even its antennae were still. Dr. Riis looked at it a moment and then threw it away.

"This I suppose," said he trying hard to control himself by using stilted phrases, "is our last look upon this old world. In two hours . . ." He hesitated and then turning on his heel re-entered the house. The other two followed, un-

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derstandingly. As the door closed he finished his sentence—"Let us eat, drink and be merry, for tomorrow—bring on the waffles!"

They ate breakfast in silence, for the most part. At 6:30 the sun's disc appeared above the mountains and the chirrup of birds sounded.

"Poor deffils," murmured Prof. Pfeffler, "dey escaped yesterday only to be killed today."

By 7:30 the sunlight had become quite bright but as yet there was no sign from the ochre covering of the earth. Evidently the heat was not yet great enough. Dr. Spencerman went upstairs for his camera, while Dr. Riis and Prof. Pfeffler waited by the bay window where they could see the first sign of the awakening. At a quarter to eight Dr. Spencerman had his camera ready at the window to record the scene as they should see it. But still the heat was not sufficient.

"It must be frosty," observed Dr. Spencerman. "Would that winter could return just for twenty-four hours!" But such a thing was beyond the realm of possibility.

THEY WAITED. The suspense was becoming unbearable. Then Dr. Pfeffler turned on the radio.

From it came not the voice of the announcer, but a terrible roaring like a gigantil hail storm. "It's the swarm," said Dr. Spencerman in a low voice. "In New York the sun has been up four hours now."

Suddenly the voice of the announcer came in: "The sound is deafening to the ear. The streets are black as far as I can see. The fire chief fears that some of the buildings may collapse with their weight." The three regarded each other awefully. "Buildings! To think that they would crush buildings!" breathed Dr. Riis. Then the announcer's voice began again.

"The people are still crying for Dr. Riis and Dr. Pfeffler, the two scientist-creators of the *Rex Orbis Terrarum* beetle and the culture. We have been unable to locate them by telegraph . . . We will now hear our announcer, who is stationed on top of the Metropolis Tower describe what he can see of Manhattan as a whole."

Dr. Spencerman spoke: "Those radio announcers are certainly heroes. Here the world is coming to an end before them and still they talk as tho it were merely an inaugural parade." He looked out of the window; the view was still undisturbed. He continued: "It is so serene here . . . it seems impossible that such things can happen."

The announcer's voice continued:

"We have just received word that communications have at last

been made with Dr. Riis' city, and that our telegram of congratulations will be received by him soon. In the meantime: The police have completely given up all hope of controlling the crowds on Broadway; every street in the lower part of town is covered with people and the sound of their cheering is deafening, even here, a thousand feet up. The names of Riis and Pfeffler are being shouted by all."

The three at the radio looked at each other in amazement.

Dr. Riis had just gotten back his breath enough to speak when the roar of a motorcycle sounded outside. A messenger, radiant with smiles, knocked at the door. Like an automatum Dr. Riis opened the envelope.

P. Riis,

Congratulations. Bacteria successful. Plagues checked throughout the world. Between midnight and 1 A.M. all Rex Orbis Terrarum in the world died of bacterial disease after a long period of incubation. People wild for you. You have saved the day.

ADAMS,
Secretary of Agriculture.

Dr. Riis, Dr. Spencerman and Prof. Pfeffler looked at each other in silence. Finally the latter recovered his voice.

"Vell, Dr. Riis," said he, "now dot ve is done mit dose bugs uf yours, I tink dot ve had better get busy on der examination babers for dose dummkopfs tests.

Science Fiction As Delight

(Continued from page 7)

entirely forgotten, and they take me off guard (although I may then remember that they had been there before, really); and still others hit me for the first time. And this is the way it is with all first class reading. There is, of course, a saturation point with any one work, but the outstanding will take many visits, while the general run just won't take rereading at all. And oddly enough, sometimes the really awful can be reread—but perhaps it isn't odd; perhaps that shows that the worst is not the really awful but the mediocre. ("Because thou are neither hot nor cold, but lukewarm, I will spew thee out of my mouth.")

My three authors, "Doc" Simth, Robert A Heinlein, and James Blish, are all literary descendants of Verne and Wells, and some degree of cousins of Burroughs; no matter—whatever influence ERB had upon them has been turned into good.

Rather than interrupt at length here, I shall list the titles of stories read and/or re-read by these three authors at the end of the article. Now to get on to the other four categories.

INVENTION

A GREAT DEAL of science fiction deals with imaginary inventions, and all three of these contemporaries are very strong in this quarter, but the term as I am using it is a little more embracing than that. It includes the sociological, the psychological, and the ecological, etc., as well; and more than that, it includes discipline. The premises are clear and they

are worked out; secondary consequences, in the best stories, are carefully considered. (Example: if you are going to invent some machine or process that enables a character to walk through walls, then you have to explain why he doesn't fall through floors, as Dr. Macklin pointed out.) And I'm afraid I'm going to have to use poor Austin Hall as a bad example again, for what his writing shows is lack of invention in the sense that he was terribly deficient in discipline. (In fact, I'd say he showed the most imagination in his use of language—and here it would have been far better had he learned to write English instead.)

Smith: there is cosmic spellbinding in the *Skylark* stories, and the less striking imagination in his social orderings in the Lensman series is almost redeemed by the thorough discipline with which he works them out. That is a highly controversial statement, but perhaps I can make it clearer by adding that where his premises about human nature show inhibited imagination, the logic with which he works these premises out makes for my willingness to suspend disbelief and go back to the series yet again. And innumerable of his characters' inventions are breathtaking in the best "sense of wonder" tradition, as are his depictions of alien worlds and systems, however dubious on scientific grounds. (He acknowledged that his Green System wouldn't stand up under scientific analysis, and I'll have to take his word for it. But I don't much care, and I'm everlastingly grateful that he returned to this universe in order to write *Skylark DuQuesne.)*

Heinlein: has the down-to-Earth quality of Verne, when it comes to mechanical inventions and a prolificity worthy of the mighty Jules; plus the breadth of sociological invention we find in the early Wells; and he has obviously read Smith with profit. Whatever moral or message can be found in any of his stories, none display any *ad hoc* purpose to save the world by converting everyone to RAH's notions about what constitutes a good society and what is bad in the present. (The story comes first.) More important, the stories show development and change in the ideas, so that it is very risky to assume that this or that "message" delivered by a particular character actually presents the author's private convictions—or at least his present beliefs. One constant theme is that of liberty; but we see a never-ending exploration of what liberty is (fluid, not absolute) and what the price of liberty under particular conditions is. The imagination is consistently disciplined; premises are worked out, and I'd be astonished if there have not been numerous occasions where RAH himself was somewhat surprised at where they led. All of this shows

that while RAH is a man of conviction, his convictions have not ossified, as Wells's did; and most of the criticisms and complaints I have read have shown more faulty reading on the part of shocked readers than faults in the reading matter, however fallible the author may be, and however correct some parts of the criticisms may have been. (But that is something that happens in relation to any fiction that is worth reading and talking about; the author whose writing never disturbs your thinking very likely never stimulates it, either.)

Blish: descends from all five of the others, but is most distinctly an heir of Verne, Wells, and Heinlein — though not a disciple of any of them. He is also the descendant of various authors whom the others either did not read or did not absorb into their being. (The author worth reading is also widely read; but he does not merely imitate those who really got to him; he metamorphosizes them, so that what comes out may or may not remind you of an ancestor but in any event is original and a unique product of the author — not just an echo.)

One place where JB excels beyond the other five is in imaginative exploration of the arts — something rare in a science fiction author who came up through the pulps. I do not recall serious music or poetry playing any part in Verne's work at all: Wells, of course, was a universal man, but how much music and poetry he actually had in him seems questionable; Smith loved the great epics and enjoyed music, but shows little developed comprehension of the latter (note what the Seatons and Cranes perform for the Norlaminians in *Skylark Three);* Heinlein is far more rounded out, but *Stranger in a Strange Land,* etc., suggests the limitations of the engineer's outlook upon music — one which I have found in other music lovers with an engineer's background. Of the other five, then, to give only one example, only Wells *might* have written a story on the order of *A Work of Art* — but he didn't.

CHARACTERIZATION

ONE OF THE differences between the person with talent and the person with genius is that the talented person can see the obvious after a while, but it takes genius to see the completely apparent before one's nose is rubbed in it. I am not a genius. It took a number of re-writes, each one longer than the last, before I realized that this section required a separate essay, and the most that could be fitted in here was a few brief hints.

And I also found that a better way of approaching characterization here was to look at fictional characters much in the same light that I look at real persons I read about, but have never met. There are those who are fascinating to read about, but who in person will turn out to be crashing bores, or clever manipulators who will let you "know" them so long as you are useful to them. One cannot be positive, of course, but educated guesses on the basis of reading can attain a fairly high batting average. Either you meet some of these people, or you read or hear accounts by people who have met them and whom you know to be pretty trustworthy witnesses. And, of course, innumerable people worth knowing do not make particularly exciting news copy or would otherwise be outstanding fictional characters. This is entirely subjective; but let's look at a few of the characters on the basis of those who I might like to know. The odds are that you will not agree with my choices, but, as elsewhere in this essay my purpose is to offer you a yardstick which you may use to advantage in *your* way, not necessarily mine.

Smith offers me no one that I think I would really want to know. I would trust Marc C. DuQuesne to keep his word—to the letter; and to so phrase that letter as to give himself far wider leeway than I could penetrate. Acquaintanceship with him would be interesting, but expensive in one way or another, and perhaps not worth it. If I had to spend an evening with a Smith character, I think I could stand Richard B. Seaton (Seaton has a touch of genuine humility, which is refreshing), but once a decade would suffice. The Kinnisons—having to hobnob with them would come under my spelling out of cruel and unusual punishments, still forbidden by the U.S. Constitution.

Some of the alien characters would be interesting to meet—really knowing each other would remain impossible. I think that the very imperfections which prevented Smith from creating human characters befitting his cosmic conceptions also made it possible to do so well with the non-human ones.

Heinlein has been charged with very incomplete portrayals of various characters; I think the issue is unimportant, because, where he has had (for him) a reason to do so, he has presented very believable people. Perhaps those who I'd most like to know—Zebadiah Jones, Harriman, Jubal Harshaw, Rufo, etc.—are in a sense the same person. Again, not important. One way of knowing one person is through knowing others very much like this person, but with differences. The differences show things you might not see otherwise.

Podkayne is delightful to read about—but I doubt if I would care to

meet her. Not for another twenty years—which perhaps indicates a sort of faith in the kind of person she'd be when she grows up, so is another vote of confidence in her creator.

But most of all, I'd like to know Hugh Farnham. Whether it was planned that way from the beginning, or whether Heinlein found himself steered that way, and let himself be guided even while he kept the wheel steady, is something that we may never know. At any rate, in this much-abused novel (and abused mostly for the wrong reasons; it has faults but not the ones that I've read about) the author, in addition to his custom of taking generally accepted notions and standing them on their heads, has also taken a real deep look at one of his own: the Competent Man. At the beginning, Farnham does not appear to be much different from the other Competent Men in Heinlein stories—perhaps less cuddly, but not really different. But as we go along, we begin to get beneath the surface and see the inner torment, doubt, and fear behind the outer shell of competence. And while Farnham does just about all the sort of things that previous Heinlein Competent Men have done, and is a rock of strength, etc., we find that there are situation where all this is useless. Hardly a one of the *vital* problems is solved; Farnham's day-to-day improvisations are excellent and practical; they keep the group alive day to day. But when it comes to those things which mean more than mere survival—there you see his anguish and his helplessness. His strength lies in his ability to get into touch with this, to accept the fact that this is how it is, and finally to start afresh.

Blish gives me Fr. Ramon Ruiz-Sanchez *(A Case of Conscience),* and Dr. Fred *(Titan's Daughter);* I'd like to know both of these worthies, and would like to meet Sam and Sena from the latter novel; and I'd like to know the kids from *The Hour Before Earthrise.*

The method I'm using here also works in reverse. When a character (not a caricature like an Edgar Rice Burroughs villain) is not only "evil" in some way, but so thoroughly depicted that at times he or she seems charming, fascinating (is sin unpleasant?) then surely the author has scored. The villain who is only and always repulsive makes for vividness and memorability, but who really believes in him? I do not now remember the names of the characters in *Faust Aleph Null,* but I would be afraid to meet the Chief Magus and his client. I'm not good enough to associate with them; the corruption in me would shake hands with the greater corruption in them, and that would be that.

All three authors improved in characterization as they went along, and

while *Skylark DuQuesne* is not entirely free of Smith's faults, the improvement is remarkable. I suspect that he learned something valuable from his failure with *The Galaxy Primes*. Heinlein and Blish are still developing—a wonderful thing to see, since both have passed the point where they have to progress in order to keep selling. Both could now be coasting along, refining this and that bit each time, but breaking no further trails. Both therefore are at least theoretically still risking disaster, just as Smith did actually when he tackled a theme which was utterly beyond his powers.

RICHNESS

Smith: kept going from strength to strength, for even though the human characterizations improved little, and the sociology of Boskone just isn't convincing (nor the sociology of "Civilization" for that matter), the other aspects of invention, wonder, alien characterization, etc. keep that series delightful. And even the novel which I found a failure, *The Galaxy Primes,* shows upon careful reading that the author really had a very fine story there; it was just beyond him. He needed at least the skill of a Wells or a Heinlein in portraying human beings in order to achieve what he was trying to do. But *Skylark DuQuesne* is enriched by the effort that went into *The Galaxy Primes;* and no fault elsewhere can demean the best parts of ten of his novels. (I haven't read *The Vortex Blaster.)*

Heinlein: is often most valuable where he is most complained about, precisely because he can preach and teach and scold without losing the grasp of the story he is telling. Wells's digressions are interesting as essays, but often as not ring down the curtain on the story; Heinlein's do not. This point is controversial; you will read other criticism well worth reading which claims just the opposite. I suggest, however, that where this seems to happen for a particular reader it is not a case of the author having stopped the flow of the story (changing the tempo is another matter, as any lover of serious music knows) but the reader having stopped himself with emotional reactions to the ideas being expressed. And one reason why I suggest this is that I have never heard complaints about the digressions stopping a Heinlein story in its tracks from persons who *agreed* with the ideas expressed in the digressions.

Blish: In common with Verne, Wells, and Heinlein particularly, there is the careful attention to details which makes for involving the reader in a way that he can feel he is in the story. That sounds trite. I wish it were. The fact is that innumerable well-paid science fiction writers have neither the imagination to realize that this is needful, nor the discipline

to go ahead and do it. Perhaps some do not care—and why whould they, when they can get paid well for bad, shoddy work? But what all six of our authors have (and the others I mentioned briefly above have it, nor are they the only ones) is love: love of what they are doing, personal involvement. For whatever their faults (and perhaps you will think of Burroughs first of all, as I just did), they *cared* when they wrote; they put their blood; they gave as much as they had to the story they were writing now. If there were restrictions in the market for which they were writing, then they set out to see how *much* (not how little) they could do within these limitations; and sometimes they transcended the limitations.

A number of the oldtime pulp authors (and not just the science fiction and fantasy pulp writers) loved what they were doing; and it showed in their stories, as it always does in writing.

Also like Verne and Heinlein, Blish has scientific honesty; if there are scientific boners (something which I could not tell) it is never through lack of concern or a feeling of contempt for the readers. Mechanical inventions are worked out; and in Heinlein and Blish, secondary consequences are considered; motivations and character metamorphoses are examined at length. To give one example: while the action chart of the softcover, expanded version of *Titan's Daughter* does not differ in my memory from that of its original version as *Beanstalk*, the extra wordage is not padding; it makes a difference worth having.

REWARD

AS I NOTED last time, it would have been better to have entitled this category "demand", because what I am really considering is the sort of things the author in question demands of his readers; the reward comes from acceding to the demands—and obviously I would not be talking about these authors at all had I not found it rewarding to read them with close attention.

Smith: demands that you follow his intricate scientific speculations just for the mind-stretching helluvit, and never mind what Einstein says. What if . . . ? In the Lensmen series he demands that you accept a Wagnerian scale of events and motion, even though there's ample excitement in the present episode. We are not going to get to the grand climax in a hurry.

While I personally liked the manner of presentation that Tremaine and Campbell insisted upon—that the Lensman series be presented as mysteries, with the reader knowing no more than Kimball Kinnison and

his colleagues knew in any particular story—this is not what EES had in mind in planning the series. I don't blame him for feeling that his way was better, or for taking advantage of book publication to have his own way about it.

Either manner is legitimate, and either manner has its own traps. The way I first read the series, it was easy to assume that "Doc" himself hadn't carried the secret of Boskone beyond the end-point of *Gray Lensman*. Sometimes this sort of thing happens when an author starts out with no more than one or two stories of a series in mind. It so happens that the grand solution was EES's starting point—he actually wrote it first—so I did him wrong at the time. The difficulty with the way he preferred is that, letting the reader see the solution from the start, you have to present consistently sound and convincing reasons for the lead's not seeing the solution to the problem any sooner then he does; otherwise you have an idiot plot. Some stories (van Vogt comes to mind with the Gosseyn series) fail so markedly here that you just can't ignore the flaw; it keeps jumping out at you as you read along. Others may show failure when you think about them carefully afterwards. Smith delights me enough so that I haven't bothered to look for flaws that did not leap out at me as I read.

Heinlein presents a range of interests and personal explorations which is far wider than the obvious subject matter, or specific plot, of any particular story would seem to require. A number of these are what you've been told are "reactionary" propositions—therefore bad. This is a label, the general purpose of which is to stop you from thinking—to stir you up emotionally so that you will react at once to something labelled "bad" without (a) looking to see if the label really applies (b) thinking for yourself to see whether this is really bad, even if the label is correct.

The anguished cries that I have heard or read about Heinlein for the past decade or so indicate that this labelling has very largely achieved its purpose. (Which is hardly astonishing, and certainly has not astonished me. An awful lot of the communications around us are designed to promote unthinking reactions—signal responses—to labels in general. And an awful large percentage of "education" is designed to provide intellectual-sounding justifications for emotional conclusions that were jumped to without thought. Who was it that said Man is a rationalizing, not a rational animal? Whoever it was, I think he had something there.)

In his own way, Heinlein is nearly as outrageous at times as Ezra Pound; but unlike Pound he does not compound his demands by making

it difficult for the reader to discover just what he is talking about in the first place. (But both seek to stimulate the reader into thinking, instead of reacting to labels; and if in the process the reader discovers that either or both of these authors are not free of the same fault, no harm is done. After all the teacher's aim is to make himself superfluous.)

But what the continued vivacity of the novels tells me about RAH is that (unlike the latter-day H. G. Wells) he is not terribly anxious about whether other people agree, or how many people agree; he is too busy preparing his next assault upon the readers' complacencies—an assault which will come out in the course of a story, not a story which will come out in the course of an assault—to worry overmuch about how they took the last one. (Not that he scorns all those Hugos, I'm sure!)

As with nearly all other critical judgments, these may tell you more about the critic than about the authors discussed. However, it wouldn't do any harm to look and see if what I say I've found is really there.

Blish: has been accused of obscurity, as Heinlein has been charged with reaction. Another label designed to prevent thought—and in this sort of case, designed to permit a reader to congratulate himself on laziness. Works like *Common Time* and *Testament of Andros* require close attention and thought in order to find out what they are about. The value of obscurity lies in the motive behind it.

There *is* a sort of obscurity that makes a work worthless; that is where a puzzle is presented to the reader for no other reason than that the author can score if the reader doesn't get it. *Meaningful* obscurity results when an author finds that he cannot say what he has to say in a conventional presentation, and has to employ new means for this particular end. He may find the means elsewhere in literature, and use his own variation upon it; he may have to forge the means anew, as James Joyce did in *Ulysses,* and later. In neither instance is the intent of the obscurity to conceal meaning from the reader; in both instances, the means make demands upon the reader beyond the level of most other writing—most of which does not require too much attention.

But whether he is writing in an experimental manner, or in the conventional one, or combining both, Blish demands that you pay attention.

This is widely regarded as a horrible and "undemocratic" thing by the ignorant, the half-educated, the indolent, and those who find it profitable to pamper self-indulgence in reading.

Please note that I have NOT said that everyone, or any particular person, who does not want to read difficult authors is therefore ignorant, half-educated, indolent, etc. This does *not* apply to the person who can

say, in effect: "This author is hard to read and I don't feel it's worth my while; I'd rather not; but my by-passing him doesn't make him bad." Such a person respects the spirit of democracy by not trying to make the world conform to his own private preferences. It is those who complain bitterly, who take up arms, who raise charges of "reactionary", "phony", "fascist", etc. *ad nauseam,* against the difficult author, *solely on the grounds that he is difficult,* that I speak of. And it goes without saying that many of these people pick labels like those in quotations above rather than honestly admit that the author in question is too much of a strain of the brain, for them.

As science fiction "progresses" we will find increasing obscurity; but obscurity is not confined to jawbreakers of words, or words out of unabridged dictionaries, or again a matter of Joycean puns. What is more simply expressed than the parables of Jesus in the New Testament? Yet, I have found that innumerable people find these parables tremendously obscure.

CONCLUSION

THERE ARE MANY aspects of delight in science fiction, as there are in almost any other category of fiction; but in the highest examples of the art there are very particular delights which you will not find even in the best of other fiction. And it is this special quality of imagination and speculation in regard to science and scientific possibility (however remote) which can make an otherwise poor story fascinating—at least to the beginning reader.

There are those who have contended that, because of this, we should not worry about the other qualities that science fiction has in common with mainstream. In a sense, I agree: we should not be anxious; we should not be defensive; we should not feel it our duty to proclaim such palpable nonsense as the notion that science fiction is *ipso facto* superior to all other kinds of fiction.

Where I disagree is the contention that, because of its special qualities, there is no need for the author of science fiction to learn how to write, and then to write as well as he possibly can, and to work at increasing his potential as a writer. In other words, I reject the proposition that any sort of slop is good enough for science fiction readers, so long as you get the gosh-wow-boy-oh-boy-oh-boy! element in.

And I disagree with the contention that criticism of science fiction, especially by insiders, should be "constructive".

First of all, what those who complain about as "destructive" criticism is not destructive at all. It is what they call "constructive" criticism that is destructive. Constructive criticism of fiction is worthless; it is worthless to the author, worthless to the reader, and damaging to the art of fiction.

It blurs, blunts, and slithers; it is "nice", comforting, and cuddly. It says nothing at all if it cannot be complimentary; makes cozy suggestions which mean nothing, and if it is at all aware of the difference between good and bad writing, it does its best to conceal any such awareness. In short it wants freedom without responsibility — and winds up a slave to sloppy thinking and second-hand feeling. In science fiction, it wants the right to call a work "great"without requiring that the example fulfill the qualifications of enduring literature.

But Damon Knight has already gone in to all this, showing in detail just *why* numerous over-rated science fiction exhibits are not great at all. You won't find any destructive criticism in this book — but you will find genuine criticism. And that is something that no artist really wants. As Virgil Thomson (or perhaps it was Thomson quoting Gertrude Stein) points out, what the artist wants is praise and only praise.

I sympathize with the artist. I'd like to be praised for my own writings, too. And it's painful to be told either that (a) I just have not committed the wonderful story I had in my head to paper in masterly English (b) it wasn't a wonderful story at all (c) or both. But there is one compensation: when I do get praised by a real critic, I know it's genuine and not a wishy-washy snow job by someone who doesn't know the difference between good and bad. Which is just one reason why I detest "constructive" criticism.

I do not think, though, that there is anything wicked about enjoying a story that is full of flaws, or an author who writes very imperfectly. Accepting this sort of thing for what it is, simply because you find it delightful, is surely a healthy thing. That is why I won't apologize for having Burroughs on this list. But healthy delight in the level of art which ERB attained doesn't need the assurance that the enjoyable is the acme of literature. I find it good for the soul to pick ERB and Robert E. Howard to pieces every now and then — and then sit back and say, "But they're lots of fun to read just the same!"

Looking back over the three parts of this essay, I am struck with the thought that if I had started five years or so back to read and/or re-read a selected half dozen authors, in order five years hence to write an article like this, I could not have selected a much wider range than my instincts actually led me to. These six are not all of it, by any means (other

authors I have been reading recently—Lester del Rey comes to mind at once—give me more characters whom I would really like to know); but among the six I've written about, you will find some of the very best and some of the very worst elements to be found within the full range of science fiction; you will also find a number of worthwhile points in between the extremes.

None of these six authors is so great as to be unassailable, and I am aware of more faults, as well as virtues, in each of them than I have been able to cover here. If I have dwelt more upon praise than fault-finding, it is because my purpose here is with delight, some of its many faces in science fiction. And in this very imperfect world, filled only with imperfect people, delight very often manages to be delight in spite of this, that, and the other. RAWL

Stories Read or Re-Read

E. E. Smith, Ph.D.
The Skylark of Space (re-read)
Skylark Three (re-read)
The Skylark of Valeron (re-read)
Skylark DuQuesne (read & re-read)
Spacehounds of IPC (re-read)
The Galaxy Primes (1st reading)

Robert A. Heinlein
The Door Into Summer (1st reading)
Stranger In A Strange Land (1st reading)
Podkayne Of Mars (1st reading)
The Moon Is A Harsh Mistress (1st reading)
from *The Worlds of Robert A. Heinlein:* 1st reading of *Pandora's Box, Free Men,* and *Searchlight.*
from softcover edition of *The Man Who Sold The Moon:* rereading of *Let There Be Light*
The Past Through Tomorrow (1st reading of: *Delilah and the Space Rigger; Space Jockey; The Long Watch; Gentlemen, Be Seated; The Black Pits of Luna; "It's Great To Be Back!"; Ordeal In Space* and *The Green Hills Of Earth.* Re-reading of: *Life-Line; The Roads Must Roll; Blowups Happen; The Man Who Sold The Moon; Requiem; "—We Also Walk Dogs"; Logic of Empire; The Menace From Earth; "If This Goes On—"; Coventry; Misfit* and *Methuselah's Children.*)

James Blish:
The Seedling Stars (1st reading, except for Cycle One of *Surface Tension)*
So Close To Home (1st reading of: *Sponge Dive; One Shot; First Strike; The Abbatoir Effect; The Oath; FYL* and *The Masks;* rereading of *The Box; Struggle In The Womb* and *Testament Of Andros)*
Galactic Cluster (1st reading of *Tomb Tapper, King Of The Hill; To Pay The Piper; Nor Iron Bars,* and *This Earth Of Hours;* re-reading of: *Common Time, A Work Of Art,* and *Beep)*
The Warriors Of Day (re-read)
Titan's Daughter (re-read)
A Case Of Conscience (re-read)
They Shall Have Stars (re-read)
A Life For The Stars (1st reading)
Earthman, Come Home (part re-reading, part 1st time)
The Triumph Of Time (1st reading)
The Hour Before Earthrise (1st reading)
Faust Aleph Null (1st reading)

Down To Earth

The Finlay covers have mostly been approved, and not everyone who answered "no" to the question "Did you like the cover?" in our fourth issue considered Virgil's effort in any way a poor one.

Virginia Tiuton writes from Ohio: "I don't think it represents the contents very well. It looks ethereal, sort of 'man reaching for the stars', and your stories are not like that at all. I choose a science fiction book generally by the cover, and this was not what I had expected. I have been reading science fiction for some forty years, since the first large-size *AMAZING* and such. I like future science fiction, development of life in the future, the rise and fall of types of government and civilization, etc. *The Last Shrine* was good. The idea of reading stories like this is to entertain, no? Please don't print to horrify, or push political sides—we have enough of that!"

While we cannot guarantee that you will never find a story in *FAMOUS SCIENCE FICTION* horrifying, or that you will never find a story which favors some political "side" in some way or another, it just isn't our purpose to do either. There have been stories which were written with little intent other than to shock (and in a great deal of contemporary "art", literature, film, etc., shock is

being used as a substitute for thinking), as well as stories written only for propaganda purposes—and there have been numerous examples of both in science fiction magazines past and present. I cannot promise that you won't ever see something in our pages which *to you* seems to be an example of one or the other, but only that stories which *to me* seem to be an example of shock or propaganda for its own sake just won't be selected for this magazine.

W. H. O'Neill writes from Nebraska: "I suspect that you have received a lot of praise for reviving some of the old illustrations as well as the stories but just to make sure I'll send on my own. One thing about those old magazines, despite the fact that there was some pretty awful artwork at times, they were still a pleasure just to look through now and then. You could nearly always be sure of finding one or two and sometimes more pictures that were really breathtaking in one way or another, they really had that element of wonder in them. So it's wonderful to see some of them revived. This certainly applies to the pictures by Wesso and Paul in your latest issue, and the ones by Orban weren't at all bad, though he got a lot more imaginative later on."

Selecting *Master of the Brain* as the best story in the Fall issue (#4). *Syl Robbins* of Victoria, Canada, goes on to say: "It combined the ruined civilization of *The Time Machine* with Wallace West's *The Last Man*. I give three cheers to this excellent series.

"Next in line for tops was *City*

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of Spiders. I like the author's idea of us in relation to our six-legged friends (fiends?).

"I want to place *Master of the Octopus* next in line because it was so surprising. The characterization of Morehurst was almost nil, which makes his air one of mystery.

"*The Last Shrine* was the next up. I had to puzzle for a time until the explanation of the girl came to me, but this tale was a classic in itself.

"Next to last was *The Times We Had*. Another surprise ending in this one. I want to say, I have never pondered on this area of the space race, and you know, it could just be true!

"Lastly was —*Do Not Fold or Mutilate*—. I had to re-read it before it made sense and was I ever shocked."

Our six-legged friends (fiends?)? You must be thinking of insects. Munn's story was about arachnids, which have eight legs.

Needless to say, there were opposing reactions to *The Last Shrine*, but apparently most of those who didn't care for it didn't want to say why. An exception, however is *Charles Hidley*, who places his feelings clearly on the line: "Cuthbert's yarn is the kind of thing that almost did science fiction in at the end of the 30's. I was surprised that it wasn't from Sloane's *AMAZING*. Boring and tedious and—is the word 'expository'? No actual interest until the last chapter.

"Odd how one sensed the same kind of *angst* in both short stories at their very beginnings: painful and suffocating: too *now*."

Explaining his opposition to list-

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Our Earlier Issues?

#1, Winter 1966/67: "The Girl in the Golden Atom", Ray Cummings; "The City of Singing Flame", Clark Ashton Smith; "Voice of Atlantis", Laurence Manning; "The Plague", George H. Smith; "The Question", J. Hunter Holly.

#2, Spring 1967: "The Moon Menace", Edmond Hamilton; "Dust", Wallace West; "The White City", David H. Keller, M.D.; "Rimghost", A. Bertram Chandler; "Seeds From Space", Laurence Manning.

#3, Summer 1967: "Beyond the Singing Flame", Clark Ashton Smith; "Disowned", Victor Endersby; "A Single Rose", Jon DeCles; "The Last American", J.A. Mitchell, "The Man Who Awoke", Laurence Manning.

#4, Fall 1967: "Master of the Brain", Laurence Manning; "Do Not Fold or Mutilate", William M. Danner; "The Last Shrine", Chester D. Cuthbert; "The Times We Had", Edward D. Hoch; "Master of the Octopus", Edward Olin Weeks, "The City of Spiders", H. Warner Munn.

#5, Winter 1967/68: "The Pygmy Planet", Jack Williamson; "Destroyers", Greg D. Bear; "The City of Sleep", Laurence Manning; "Echo", William F. Temple; "Plane People", Wallace West.

Order From Page 127

ing the editorial on the preference pages, *Mike Grimshawe* says: "When stories are rated, a reader judges the stories by saying, 'Well did I like that more than this?' We then tend to contrast, but since there can only be one editorial, which is certainly not a story, then you're faced with the possibility of an editorial rating higher than some stories. The magazine's purpose is to present the reader with stories, not editorials. If it were editorials that I were contrasting, fine, but there's no contrast here.

"About your editorial *(Science Fiction as Delight,* part one), I could not help thinking that you were talking about Samuel R. Delaney, although I know it isn't true.

"If you have read Delaney's last two novels then you can see why. Delaney just naturally delights. Judge a Delaney novel—say *The Einstein Intersection*—by your six elements: invention, suspense, characterization, surprise, richness, and reward, and you find this novel to contain them all. Delaney does not lack invention; the suspense is there, as I could not put the novel down once, and read it all at one sitting. His characterization is a masterpiece in itself. Characterization that constructs a human being (almost, anyway) with his desires, his thoughts, his innermost feelings so that you come to see what is in this character, what he is made of, is very hard to find. Delaney has it. As for surprise, Delaney is full of surprises, the unexpected. Richness is the richest part of the book; it sings, cries, laughs with beauty (from your editorial definition). The reward of Delaney is very evident, especially in *Babel-17.*

"Only Delaney is so much more, of course. I have yet to see reviews of *Babel-17* or *The Einstein Intersection,* but I know they will be good because Delaney is only the greatest writer to ever live. . . . I didn't mean to get carried away, although I mean what I say."

"Also the editorial in a way gives a would-be writer like myself a better idea of what a story should be."

While the editor is no clairvoyant, or other sort of foreteller, Friend Grimshawe, we do predict that unless you discorporate very soon, or neglect to read widely, Mr. Delaney (whatever his strengths and virtues) will not remain your choice for the greatest writer who ever lived.

It happens to nearly everyone who is literary minded; and when it happens you'll have a way of finding out how close you are to "maturity". The immature feels ashamed of having loved an author who now seems unworthy in relation to his present favorite (we hope someone who is really better) so has to prove to himself that he is no longer a clod or an infant by totally despising the deposed king.

I am not referring to the fact that at a future time, it may no longer be possible to read a present favorite with any sort of pleasure—that can be natural enough. What I refer to is the feeling that because one no longer obtains the delight that once was, the author once loved has therefore been proved to be utterly worthless. It's the ability to look at one's subjective reactions objectively which separates the men from the boys as one's reading experiences widens. RAWL

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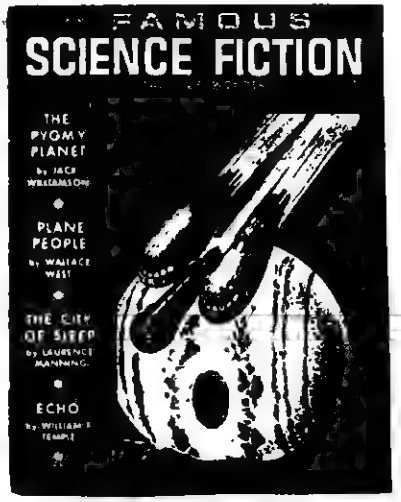

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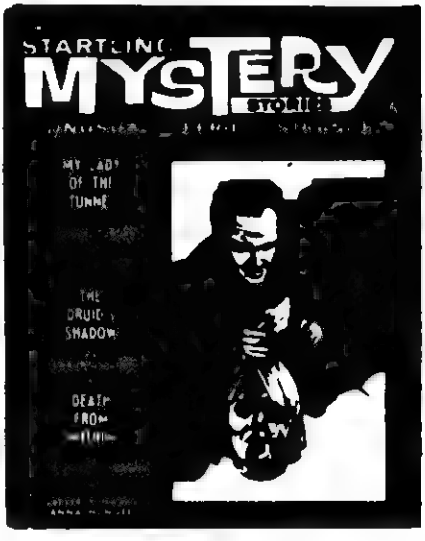

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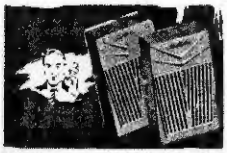

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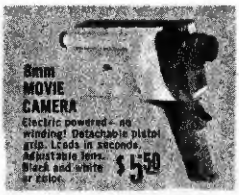

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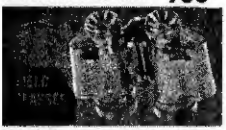

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